국제학석사학위논문

Enhancing Indonesia's Participation in Automotive Global Value Chain:

Formulating to Upgrade Its Strategies Using the ABCD Model

인도네시아의 자동차 산업 글로벌 가치사슬참여지수 향상 :

ABCD 모델을 이용한 전략 개선을 위한 수립

2017 년 7 월

서울대학교 국제대학원
국제학과 국제통상 전공

Gerry Sondakh

Master Thesis of International Studies

Enhancing Indonesia's Participation in Automotive Global Value Chain:

Formulating to Upgrade Its Strategies Using the ABCD Model

인도네시아의 자동차 산업 글로벌 가치사슬참여지수 향상 :

ABCD 모델을 이용한 전략 개선을 위한 수립

August 2017

Graduate School of International Studies
Seoul National University
Seoul, Korea
Gerry Sondakh

Enhancing Indonesia's Participation in Automotive Global Value Chain:

Formulating to Upgrade Its Strategies Using the ABCD Model

A thesis presented by

Gerry Sondakh

A dissertation submitted in fulfillment of the requirements for the degree of Master of International Studies in the subject of International Commerce

Graduate School of International Studies

Seoul National University

Seoul, Korea

August 2017

Graduate School of International Studies
Seoul National University

THESIS ACCEPTANCE CETIFICATE

The undersigned, appointed by

The Graduate School of International Studies
International Commerce Program

Have examined a thesis entitled

Enhancing Indonesia's Participation in Automotive Global Value Chain:

Formulating to Upgrade Its Strategies Using the ABCD Model

Academic Advisor: Professor Moon Hwy Chang

Presented by **Gerry Sondakh**

Candidate for the degree of Master of International Studies that is worthy of acceptance

Signature	…….
Committee Chair	Rhee, Yeongseop
Signature	…….
Vice Chair	Ahn, Dukgeun
Signature	……
Examiner	Moon, Hwychang

ABSTRACT

Gerry Sondakh
International Commerce
Graduate School of International Studies
Seoul National University

The study analyzes how Indonesia can upgrade their participation in the automotive global value chain (GVC). GVC represent a new path for a country's development. Automotive industry becomes one of the engines of the economic development for Indonesia. As one of the big players in SEA region, there are plenty of rooms for Indonesia to enhance its participation in the automotive GVC.

The study suggests that there are four strategic development trajectories for Indonesia to upgrade its participation in the automotive GVC. First, Human Capital Development is an essential element for the upgrading development. It serves as the backbones of the other strategic development strategies. Second, attracting transnational firms is the quickest way to increase the participation in the automotive GVC. Third, Indonesia need to start participating in the higher value-added activities rather only focus becoming assembly manufacturers. Indonesia has a good prospect in the parts and components sector of automotive industry. The last proposed strategy is related to enhancing the global (regional) networks. It is important for Indonesia to strengthening the regional relationship in SEA region.

Keyword: Global Value Chains (GVCs), upgrading process, automotive industry, Indonesia

Student Number: 2015 – 25071

Table of Content

List of Figures

List of Tables

List of Acronyms and Abbreviations

AAF	ASEAN Automotive Federation
ABCD	Agility Benchmarking Convergence Dedication
AEC	ASEAN Economic Community
ASEAN	Association of Southeast Asian Nations
CBU	Completely Build Up
CKD	Complete Knock Down
EPZs	Export Processing Zones
FDI	Foreign Direct Investment
GVC	Global Value Chain
ICT	Information and Communication Technology
LCGC	Low-Cost Green Car
MPV	Multi-Purpose Vehicle
OECD	The Organization for Economic Co-operation and Development
OBM	Original Brand Manufacturer
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
REM	Replacement Equipment Market
SEA	Southeast Asia
SMEs	Small to Medium Enterprises
SUV	Sport Utility Vehicle
TiVA	Trade in Value Added

Chapter 1 INTRODUCTION

1.1 Background

Over the past decade, a new phenomenon in the global economy has emerged. The production process and distribution for the single product take place simultaneously in several countries. It creates emerging form of global value chains (GVCs). The GVCs approach points out new linkages in the global economy. Therefore, it is needed to have the new mindset to adjust.

There is a substantial change in the conception of international trade and developing country's firms. It is not only merely about designing and making the product in the local country and then export the finished product. Nevertheless, the firm from developing country may only export or sell some of the parts of the final product to a foreign country where the final assembly located. It means developing countries become a part of the bigger value chain in the global economy.

The challenge is how a country captures a bigger slice of the GVC pie. Economies in the upstream tend to capture a larger share of the value added generated in GVCs than downstream economies (Cheng et al., 2015). Other than that, the economic complexity of a country also become one of the determinant factors in capturing value added of the GVCs. Bigger the economic complexity, bigger the chance for a country to reap a bigger share of the value added.

Nowadays, countries' integration in the world economy is highly linked to their participation in global value chains (GVCs). In today's world, "what you do" is more important than "what you sell" for the development of a country. GVCs represent a

new path for a country's development. Participating in the GVCs provide better access to markets and knowledge of leading players. For developing country, it is important to enter global value chains and benefit from the participation. Involvement in the GVC can be the fast track for the country's development. It can happen if the country implements the strategy in a way to allow rapid innovation by increasing technological and production capabilities.

Participating in GVCs indeed beneficial for a development of a country, but the amount of participation for every country do not equally divided. Thus, the development level also varies among countries. Some of them play a bigger role, while some only have a chance to participate in the small area of the value chains. Bigger the part of the participation, bigger the chance for a country to take the benefit from the value chains. Developed countries usually take a lead role in GVCs, and developing countries join the chains and follow the lead. From this trend, developed countries have a bigger benefit than the developing countries. Therefore, many developing countries compete to increase their participation in the GVCs to reach higher development.

Indonesia also indeed need to involve in the GVC arena more actively. Based on several indicators used to measure how involved a country is in GVC, Indonesia's level of participation is relatively lower than the other country is Southeast Asia region. Thus, it is needed for Indonesia to start developing a strategy to upgrade its involvement in the GVC. Finding its place on the world stage might one of the biggest challenges for Indonesia.

Automotive industry becomes one of the engines of the economic development for Indonesia. Indonesia's automotive industry is one of the oldest and largest as well as a significant sector in the country. Indonesia ranked fifth in Asia and first in ASEAN starting from 2014 for the total automotive sales. Indonesia and Thailand account for over sixty percent of the total market share in the ASEAN automotive market. As one of the big players in SEA region, there are plenty of rooms for Indonesia to enhance its participation in the automotive GVC. The capabilities of Indonesia to move up to the head of automotive GVC will become the determining factor for the sustainable growth in this sector.

1.2 Research Questions

The key research question of the study is ***how can Indonesia increase its involvement in the Automotive GVC?*** Following the key research question, the ultimate objective of this research is to formulate strategies for Indonesia to upgrade, by expanding and strengthening, its participation in the Automotive GVC. This research uses the GVC framework to analyze Indonesia's current position in the automotive GVC and ABCD model to formulate the potential development and upgrading strategies for Indonesia. The analysis also gives implication regarding the next best possible position for Indonesia in the Automotive GVC and give suggestions which strategy Indonesia should give more priority.

The rest of this paper proceed as follows: Chapter 2 contains study from existing literature related to GVC and upgrading trajectories for developing countries. Chapter 3 consists of the method on how the research is conducted and points out the structure of the study. Chapter 4 explains in detail the upgrading strategies for

Indonesia. Lastly, Chapter 5 shows the summary of the finding of this research and indicates some factors for further studies.

Chapter 2 LITERATURE REVIEW

2.1 GVCs: The Concept

2.1.1 Definition of GVC

The changes in the structure of global economy have altered the global production and trade into a system which called global value chains (GVCs) (Gereffi, 2015). World trade, investment, and production are increasingly organized around GVCs. The GVCs framework also affects and has implications for corporations, countries, and including the workforce.

A value chain is a sequence of activities. It starts from the scratching out an idea, develops it into a design, and prepare the production process by purchasing the raw materials needed, later followed by the manufacturing process. After that, marketing and distribution will take into account and finally, delivery the product to the final consumers. After sales services, also become important in nowadays businesses. GVC involves all those activities that firms engage, not only in the domestic or at home but also include activities occurred in overseas.

> *"GVCs encompass the full range of activities required to bring a good or service from conception, through the different phases of production (provision of raw materials, the input of various components, subassemblies, producer services and assembly of finished goods) and delivery to final consumers, and, finally, to disposal after use. In the context of globalization, the activities that compose a value chain are*

generally carried out in inter-firm networks on a global scale (Gereffi, 1999; Gereffi et al., 2005; OECD, 2011)."

GVCs are an essential aspect of the trade, investment and production patterns in the world economy today. It also has remarkable impacts on economic performance. The essence of the GVCs is the ability to maximize utility by selecting appropriate partners and locations across the world to establish the most efficient value chain. The emerging of GVCs shows that economies are more interconnected than before, and they are increasingly specialized in niche activities and specific phases of value chains rather than in industries.

Openness to international trade and investment is necessary but not sufficient to connect to the GVC. Improvement in upstream and downstream capabilities are needed. Investment in people's education and skills required. Effective labor market policies and social safety nets to enable displaced workers to find other jobs are aspects to be considered as well. Moreover, investment in knowledge-based assets such as R&D, branding, design, and software is necessary to benefit from GVC. That enables firms to differentiate their products and economies to strengthen their performance in global networks.

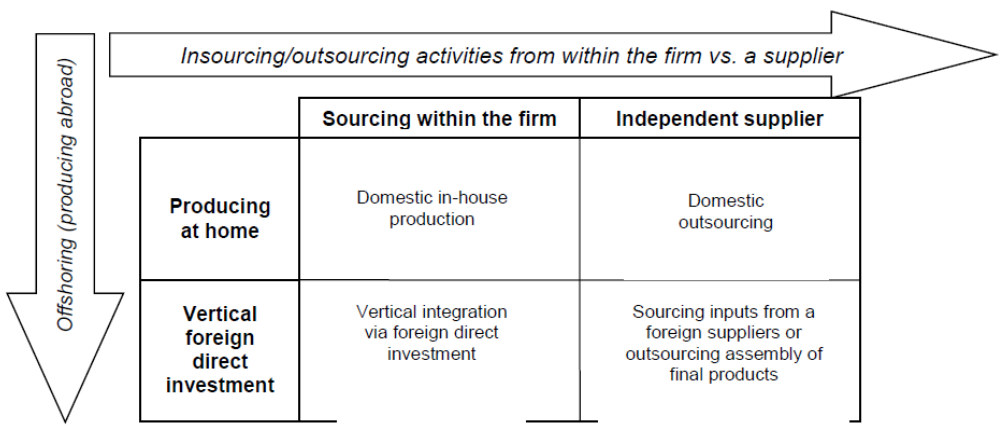
2.1.2 The Beginning of GVCs

Based on Baldwin (2012), "unbundling" production for the first time took place during the second half of the 19th century. Then, the second unbundling happened from the 1980s; the manufacturing process spread across countries both geographically and organizationally. According to Antras and Helpman (2004), as mentioned in figure 1, there are four types of the organizational and geographical

structure of production. First, domestic in-house production, which means the operation take place domestically and inside the firm. Second, production stage can be done inside the company itself, but some of them operated in the foreign location. Third, companies can assign other companies to do the activities, which is called outsourcing. It can be done both in the domestic country (domestic outsourcing) and foreign location (offshore outsourcing). The new sourcing strategies increase the growth of foreign direct investment (FDI) and intra-firm trade, and vertical arm's length trade with independent suppliers as well (Cattaneo, 2013).

Figure 1

New Sourcing Strategies



Source: Antras and Helpman, 2004 in Cattaneo et al., 2013

2.1.3 Connecting GVCs to Economic Development

Ensuring that GVCs is as linked as possible into the domestic economic is a primary objective for the country after entering the GVCs. Economic upgrading is the key to turning GVCs participation into sustainable development (Taglioni and Winkler, 2014). Taglioni and Winkler point out there are four ways of how GVCs supports

development and industrialization. First, GVCs generate demand and assistance effect in the host country. Demand effect come from demand from lead firms for a better input from local suppliers and assistance effect means lead firms can assist local suppliers by knowledge sharing. Thus, technology spillovers can happen, and as a result, supplier's country can increase the quality of the inputs.

Second, GVCs participation creates fierce competition in the input market because of the limited resources in the local market. Because of this competition, firms can increase its productivity. Other than that, from the foreign companies that come to the country, local firms can experience demonstration effect by direct imitation or reverse engineering of the GVCs product.

Third, the country also can experience amplification effect, participation in GVCs directly or indirectly will stimulate investment in infrastructure and backbone services. The benefit will not only perceived by the GVCs participants but also other parties in the non-GVCs economy. Lastly, GVCs also beneficial for the labor market. Higher skilled labor will be more attractive for foreign firms. As developing countries may lack in this side, foreign companies sometimes give training for the local labor. By this, there will be improvements in the local labor skill. As a result, knowledge embodied from the participating firms moves to the domestic firms.

According to Cattaneo and Miroudot (2013), a country should take major paradigm shifts to be more successful in the participation of GVCs. First, a country should change the strategic framework from countries point of view into firms and GVCs. Second, a country needs to focus more on tasks and business functions than industries. Identifying the country's best position in the GVCs is the major goal.

Third, concentrate on the flow of the country's assets rather than endowment point of view. Within GVCs, firms can be competitors and at the same time serve as a source of key inputs as well. Thus, it is necessary for a country to have efficient channels to foreign market to become competitive in the GVCs.

2.1.4 Upgrading Trajectories from Various Existing Studies

Economic upgrading is the key to turning GVC participation into sustainable development (Taglioni and Winkler, 2014). The concept of economic upgrading is largely about gaining competitiveness in higher value-added processes and raising domestic labor productivity and skills.

UNIDO's *Industrial Development Report 2002/2003* show the positive view of the potential contribution by joining the GVC for the upgrading and development of a country. Based on the report, there are two key elements of upgrading in the GVC, first is the acquisition of capabilities and the second one is access to the markets in the global economy, not just in general but including particular marketing channels as well. A country can gain from learning effect as the result of supplier-buyer interaction in the GVC (UNIDO, 2002). Later the report notes that participating in GVC should promote learning by developing country firms and enhance technological capability and upgrading. However, a country should meet a certain level of capability to be able to enter the GVC (Humphrey, 2004)

Participating in GVCs offers countless opportunities for a country to have more economic development. Entering and integrating into GVCs are a challenging process for developing countries. Participation in GVCs is necessary for a country but by simply participate is not enough (Taglioni and Winkler, 2014). Thus, once a

country has entered into the GVCs, they should try to find a way for upgrading their participation within the GVCs to gain more from the chains.

Engagement in GVCs is seen as a necessary condition for firms or industries to become globally competitive through upgrading processes for the developing countries (Kadarusman, 2016). There is some certain level of requirements that the country should meet to enter or upgrade in the GVC. It may require new skills and knowledge because of a gap between skills and knowledge that a country has endowed and capabilities needed in the value chain. Because of this, formulating development strategies to bridge the gap become important for the upgrading process of the country. The upgrading strategy should mainly cover the acquisition of capabilities. However, it is not the only aspects should be considered, changing the relationship between supplier and buyer is also an important aspect that should take into account while formulating strategies.

Humphrey (2004) also emphasize similar points. According to him, upgrading process involves the development of both technological capabilities and market access. More on that, upgrading process by learning is not costless activities. It requires a massive investment by government, firms, and other support agencies as well. Humphrey (2004) also points out that there are two ways of upgrading in the GVC. First, is upgrading by buyers. Within this way, firms from a country try to find other prospective buyers from a different country to broaden their market. The second channel is by upgrading within the existing chains. This way is focusing more on the firm as supplier itself in the industry. The goal is to make the chains more sophisticated and the formation of global supply networks.

Humphrey and Memedovic (2003) argue that having a massive FDI inflow give more opportunities for a bigger role in the chains. Humphrey and Memedovic (2003) points out based on their analysis on the automotive industry that a large FDI from assembly manufacturers attract many new components companies to come. They follow their major customer. Gereffi and Guler (2010) do a similar study on the apparel and automotive industry in the China and India. It also shows a similar result that international trade and FDI play a major role in China and India economic trajectories (Gereffi and Guler, 2010). Therefore, having high capital and technology investment inflow is important for a country.

In the same study, Humphrey and Memedovic (2003) emphasize the importance of the global supply networks. According to them, local-owned firms can serve either as second tier component manufacturers that provide the products to the assemblers in the domestic market or as global suppliers who serve the global market. However whichever their position, local-owned firms need support from the national institution in the four key areas, which are complying with standards, providing skilled labors, supplying specialist laboratory for testing and measurement of the products, and lastly, fostering market strategies for the long-term survival of the global industry.

Gereffi (2015) put emphasize as well on the relationship between public and private. Gereffi argues the variety of public-private partnership, including financial support, should be able to acquire the right capabilities needed by the firms to respond the dynamic market. The public sector should give support that can enhance private

sector capabilities to guarantee that they can capture bigger slice in the value chain. Thus, the positive development trajectories can be achieved.

Gereffi (2015) points out that build export capabilities are important for developing countries to move to the head of the GVC. More on that, moving to higher value-added activity also one of the ways. However, there is some factor that the country should consider to be able to participate in the higher value-added activities. A skilled workforce is an essential ingredient of GVC upgrading (Gereffi, 2015). Therefore, building up human capital by workforce development is necessary. More on that, workforce development should involve the combination of basic education and specialized skill training. Complying with the global standard is also one important factor. Global production must meet very high international standards for quality and safety. Hence, if local firms want to move up to the foreign market, they should prepare for meet the global standards requirements.

Humphrey and Memedovic (2003) point out that there are three channels for firms in the developing countries can prosper within the global auto components industry. First, they can act as second-tier components manufacturers operating within value chains supplying assemblers in the domestic markets. Second, firms from developing countries can ally with transnational companies and supply specialized products for global markets. Lastly, firms need support from local and national institutions, as they become suppliers to both domestic and international aftermarkets.

Taglioni and Winkler (2014) give five strategic plan to enter, upgrade, as well as strengthening in the GVCs. First, creating world-class GVC linkage. It can be done by attracting the right foreign investors, creating an export processing zones (EPZs),

finding the right trade partners abroad, and improving connectivity to international markets. Second, creating a world-class climate for foreign tangible and intangible assets. Developing countries should focus on ensuring the cost competitiveness, improving the drivers of investment, organizing domestic value chains, and improving the quality of infrastructure. Third, strengthening GVC local economy linkages on the buyers and sellers' side. Fourth, strengthening absorptive capacity. Developing countries should foster innovation and build capacity, comply with process and product standards, and the most important thing is maximizing the absorption potential of local actors to benefit from GVC spillovers. Lastly, creating a world-class workforce. It is important for developing countries to develop skills and promote social upgrading.

2.2 GVC in the Automotive Industry

2.2.1 The Characteristic of Automotive GVC

The automotive industry is one of the biggest industries in the world and often thought as one of the most global industries. Several numbers of companies that have global recognition dominate automotive industry. Automotive GVC is very dynamic and globally competitive. Powerful lead firms in the automotive GVC shape the rule of the game.

Sturgeon and Biesebroeck (2011) distinguishes three key features in which the organization of GVCs in the automotive industry differs from other sectors. First, the export of finished vehicles is highly affected by political consideration, especially to large mature markets. Second, the relationship between lead firms and Tier one suppliers are getting stronger. Lastly, the organization of production focuses

more on regional than global. Therefore, there is strong regional organization yet have a global presence.

Sturgeon et al. (2008) argue that automotive industry is either fully global or focus on specific localities which concentrate on the narrow geographic area. Global integration makes lead firms in the automotive industries to leverage their engineering effort to sell their finished vehicle in various end-market. More on that, as suppliers have taken more role in the designing process, they established design center close to their still customer to increase their collaboration. Meanwhile, regional integration is the trend on the production side. This trend emerges mostly because of the political and technical reasons. Political pressure to serve the domestic market makes automobile manufacturers build up their final assembly factories in their major established big market. Because of that, many suppliers focus on the production to serve their regional markets. More on that there is increasing trend in which lead firms to set a precondition for their big suppliers to have a global presence if they want to take other projects with them (Sturgeon and Florida, 2004).

The consolidation and globalization become one of the key drivers of global integration on the supply side of the automotive industry. Starting early 2000s, global suppliers emerge and take more role in the value chains. In the past multinational firms relied more on exported parts to the foreign affiliates or local suppliers in every location (Sturgeon and Lester, 2004). The lead automakers have tendencies to pressure their suppliers to move abroad with them. Thus, the ability to produce in all the key production regions has become a precondition to being considered to get a project for the suppliers (Sturgeon and Florida, 2004). Suppliers that has global

capabilities can concentrate their production in one or two locations near their buyers and deliver it to the final assembly factory.

Regional production is a strong feature in the automotive industry. It is because only a few lead firms in the industry, which are strong enough to re-locate their suppliers into their local or regional place where their market or final assembly production is located. The lead firms prefer to locate their operation near their end market because of operational reasons, such as design collaboration, timely manner production, or the support of globally produced vehicle platforms. Besides that, political reason also become one of the reasons. Therefore, suppliers from these lead firms directly or indirectly get pressure to move within regional scale production systems

2.2.2 Mapping the Automotive GVC

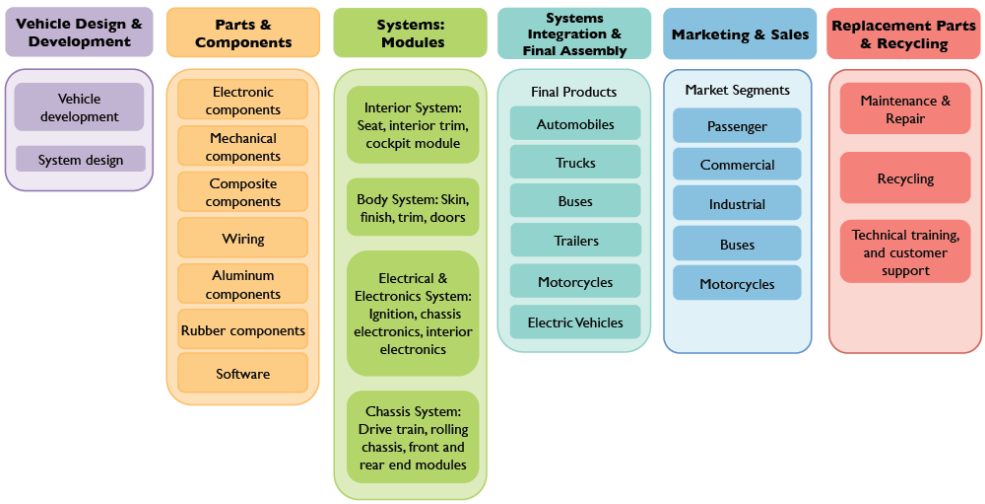
Figure 2 shows the visual representation of automotive GVC by Sturgeon (2016). The principal value chain in the automotive industry starts from vehicle design and development. This process is performed by the automakers, but there is growing trend that large suppliers do a collaboration with the lead firms. The conceptual design centralized in or near the design cluster that located around the headquarters of the lead firms.

Automakers translate the conceptual design into the parts and sub-systems that produced by suppliers. Later, suppliers assemble all the parts and components into the finished vehicles. The automotive vehicle industry is a complex assembly industry with “tiered” supply chain structure. One single finished vehicles consist of thousands of parts and components that are produced by hundreds of suppliers. Those suppliers are dispersed from Tier 1 suppliers until Tier 3 suppliers. Tier 1

supplier works alongside with the lead firms. Tier 2 and Tier 3 usually are local firms who supply parts and components to the Tier 1 suppliers.

Figure 2

Automotive Global Value Chain



Source: Sturgeon, 2016

Next stage is systems and module manufacturing. Parts and components are used to build modules. Modules then form the basis of the systems. Modules can be divided into four broad categories: interior (seat, trim, and cockpit module); body (doors, skin, finish, trim); electrical and electronic (ignition wiring, chassis electronics, and interior electronics), and chassis (drive trains, radiators, front and rear end modules). The final stage of on the production side is system integration and final assembly. Lead firms commonly carry out final assembly of the automotive vehicle. It implicitly means that final assembly plants are strategic assets for the lead firms.

2.2 Indonesia's Automotive GVC

Indonesia's manufacturing sector was an important industry for Indonesia's growth in the period 1970s until 1990s. However, Indonesia's manufacturing sector experienced a dramatic decline following Asia Financial crisis. Within the industry itself, not all of them experienced a downward trend. Indonesia's automotive industry is one of the sectors that showed a good performance. Indonesia's automotive industry has remarkable growth and becomes one of the most valuable sectors in the country.

Indonesia's automotive industry is one of the oldest and largest as well as a significant sector in the country. The automotive market shows positive indications with an increasing number of firms, rising workforce, and strong growth in value-added investment, and including expanding expenditure for research and human capital development. Indonesia ranked fifth in Asia and first in ASEAN starting from 2014 for automotive sales. Indonesia and Thailand account for over sixty percent of the total market share in the ASEAN automotive market. In 2014, it was the first time for Indonesia to take over the first position in term of sales from Thailand. Indonesia's automotive market growth at an almost double-digit annually over the past ten years. The Economic slowdown and rising fuel prices made automotive marked faced declining in 2014.

Indonesia suffered big declining compare to other countries in ASEAN in term of the total car production in 2015. According to ASEAN Automotive Federation (AAF), Indonesia's automotive industry faced 15 percent decline to the 1.09 million vehicles compared to the previous year. Total demand in a local market highly influences the total car production in Indonesia because around 90 percent of

vehicles manufactured in Indonesia is for the domestic market. Due to the economic slow-down that made weak consumer confidence in the local market, total demand in the year 2015 fell 16 percent to 1.01 million compared to the previous year. The total production capacity in Indonesia based on the number equipment installed is two million vehicles per year. It means there is still significant room for Indonesia to increase their domestic demand as well as seek a new market abroad. For the domestic market, with Indonesia's per capita car ownership still low compared to other ASEAN countries and having big population with a rapidly expanding middle class, Indonesia's automotive industry has a promising outlook in the future. Moreover, automakers also have the intention to increase their production capacity in Indonesia starting from 2016 as the result of rising trend for the domestic market and growing export to surrounding countries.

Major foreign automotive manufacturers have formed joint ventures with local conglomerates to do their business in Indonesia. The foreign manufacturers cooperate with the locals to build sales networks for their finished car production. Japanese automotive manufacturers dominate the automotive industry in Indonesia. In 2014, Japanese brands accounted for more than ninety percent of the total market. Toyota and Daihatsu both together have about fifty percent market share in the same year. Toyota was the first foreign automotive manufacturers that came to Indonesia and created affiliate with a local firm, PT. Toyota Motor Manufacturing Indonesia that was in 1970. Later other Japanese manufacturers, such as Daihatsu, Suzuki, Honda, and Mitsubishi followed Toyota to have an affiliation with Indonesia local company. Based on total capital invested in Indonesia, Daihatsu has the biggest investment with IDR 894.4 billion as of December 2014.

Passenger vehicles accounted about seventy percent of the overall sales volume in 2014. Among passenger vehicles, Sports Utility Vehicles (SUVs) and Multi-Purpose Vehicles (MPVs) account the major sales. Low-Cost Green Car (LCGC), which was launched in September 2013, shows a promising trend with increasing market share as well. Japanese brands remain strong in the market. Toyota accounts for over 40% of the total market. The key competitive advantage of Japanese firms compare to other companies from a different country are they try to fit local needs when producing the cars. Moreover, most of the Japanese automakers have local plants in Indonesia, so that Japanese automakers cut taxes by thirty percent which lead to lower selling price compared to imported cars.

Top selling companies such as Toyota, Suzuki, Mitsubishi Motor, and Daihatsu have a significant number of sales outlets spread all over Indonesia. However, Java Island takes about 60 percent of the total number of outlets, of which Jakarta accounts for 20 percent of the market in 2015 (MUFG Report, 2015). Therefore, Jakarta is the key region driving the automotive industry growth for both passenger and commercial vehicles.

Indonesia's automotive parts and components are one of the valuable sectors in Indonesia automotive industry. Previously, manufacturers from Japan dominate the parts and components market, as they serve as a supplier for the Japanese automakers in Indonesia for the assembly production. Not only as a supplier but also play at the replacement component in the after-market of the automotive industry. However, there is a steady growth from the newcomers, which is local small to medium enterprises (SMEs). After the 1998 financial crisis, there is an increasing demand for mid-value components in the Indonesia's domestic market.

Indonesia's automotive parts and components have become mature enough. Customers who demand more variety of products with the competitive price creates a significant opportunity for the new entries to play in the market. To meet this growing demand, many SMEs emerged in the local market. However, these SMEs face a strong challenge from the non-genuine branded parts and components sellers, which serve the customers in the aftermarket who do not want or cannot afford high-quality original products.

There are two primary end markets for Indonesia's domestic parts and components industry, Equipment Market (OEM) and Replacement Equipment Market (REM). OEM refer to the components produced for assembly production. REM is served for the after-market segment; domestic and export maintenance and replacement parts. There are six major categories in the automotive components; engine parts, electrical parts, drive transmission or operating unit parts, suspension parts, chassis parts, and car body parts.

The assembly manufacturers (OEM manufacturers) take control the market for genuine automotive and motorcycle parts. The focus more on the higher-value product and fast-moving products. First-tier components suppliers are usually foreign investment companies or joint venture that have certified quality-cost-delivery processes and technology. Most of the joint venture are with Japanese firms and under control of *Keiretsu* conglomerates (e.g. ASTRA International or Indomobil Sukses Makmur). The ventures produce parts and components for the first-tier assembly market that sold under OEM brands. First-tier components suppliers sell directly to the customers through certified first-tier wholesalers and after-market as well through subsidiaries.

Second-tier suppliers have a vital role in helping first-tier firms in meeting their production demands. The second-tier suppliers have a special characteristic compared to the first-tier that second-tier suppliers produce only a particular segment of the automobile. With this reason, first-tier and second-tier supplier typically have collaboration together to maximize product quality and production efficiency. First-tier firms provide the raw materials that needed for the manufacture of the parts or components to the second-tier suppliers.

2.3 Southeast Asia's Automotive Industry

There are many reasons to keep an eye on Southeast Asia's (SEA's) automotive industry. According to the ASEAN Automotive Federation (AAF), the SEA automotive industry experienced growth 11.4 percent in the last five years and reached 3.2 million units sales in 2014. The level of car ownership in the region is relatively low, and most of them are first-time car buyers. In 2014 based on the study conducted by Pew Research Centre, the share of a household owning a car in Indonesia, Vietnam, and The Philippines are less than 10 percent. It is relatively low compared to the neighboring countries, Malaysia with 32 percent and Thailand 51 percent. SEA consumers keep showing the great intent of purchasing a new car in upcoming years (PWC, 2015). With the increasing mid class level in the region, especially in Thailand and Indonesia, total sales of cars has a strong prospect in the region. Increasing mid-class level in the region makes people convert their two-wheeled vehicles into four-wheeled vehicles.

In general, total automotive sales in seven countries of ASEAN decreased by ten percent in 2014 from the previous year including the two big players in SEA

automotive, Thailand and Indonesia. Total sales in Thailand slipped around 33.7 percent in 2014. The Thailand's declining sales was relatively higher compared to the second biggest player in ASEAN automotive industry, Indonesia, which only dropped by two percent for the same period year. The Philippines and Vietnam showed different stories. These two countries showed increased growth. Despite that SEA region remain attractive for growth as a big potential market as well as a manufacturing hub for regional and global export (PWC, 2015). There is a growing trend for localizing production of components in regions, instead of only focusing on assembly production of vehicles. It means that local companies in this region try to step up into a higher level of the value chain by producing parts and components of the vehicle productions.

As the leader of manufacturing and assembly hub in SEA region, Thailand has the most extensive auto parts supplier base which appealing automakers to build Research and Development (R&D) plants there. Thailand has evolved from being a large domestic customer market into an export hub of automotive parts and components for the region and other Asia market including Europe and America. However, the uncertainty in Thailand's political environment starts to make foreign investor lost its interest to put more investment in Thailand. Indonesia continues to compete to take over Thailand position as the automotive leader in SEA. Significant expansion investment by building up new plants existed in Indonesia, especially from the Japanese automaker. In 2014, for the first time, Indonesia overtook Thailand in term of domestic demand and sales. Therefore, there is a good sign for Indonesia to take over Thailand position in SEA region.

2.4 ABCD Model: The Concept

South Korea is one of the leading economies in the world recently. South Korea has experienced rapid and sustained economic growth since decades ago. South Korea has a world-class manufacturer firms whose product trade around the world. South Korea produces a high-quality product with the sophisticated design.

ABCD model is a model developed by Moon (2016) to explain the Korean strategy (K-Strategy) for Korea's success. ABCD model composes of four factors, which are agility, benchmarking, convergence, and dedication. The first factor is Agility; speed combined with precision for increasing productivity. Korean is not only obsessed with the speed culture but also precise in what they do. A combination of speed and precision can create significant value for consumers, which can lead to massive success. For example, speed played a major role in the development of Korea. The economic growth that Korea experienced in the 1960s and 1970s would not have been possible if it were not for former President Park Chung-Hee's speed-oriented industrialization policies. However, speed should be combined with precision. Speed without precision poses risks. Precision is a critical component for success in complementing speed.

The second factor is benchmarking; learning the best practices for efficient catch-up. Learning can lead to further development and the surpassing of the original example. Korean firms do not only copy or imitate, but they add their unique strengths to the original targets that they imitated. Therefore, benchmarking does not only involve learning through imitation but also involve innovation. Therefore, the best

benchmarking strategy is to learn from the current best practice and improve upon them.

Another key factor for Korea's economic success and element in ABCD model is convergence. Convergence consists of mixing synergistically for creating new value. Exploiting and combining existing resources in a synergistic way is an efficient and less costly solution. Successful convergence strategy needs two elements working together which are mixing and synergy creation. Mixing allows the firms to exploit the advantage of various resources simultaneously. Synergy creation allows the firms to create additional value using a simple collection of separate components. Harmony and balance are an important aspect when mixing different components. The competitive advantage comes from the entire system rather than an individual activity.

The last factor of this model is dedication. Dedication is composed of diligence with goal orientation for a strong commitment. Much of Korea's success is attributed to its people's diligence. Laziness can never benefit an individual or a country, but diligence alone does not promise success. Goal orientation is a crucial aspect as it helping people's diligence in the right direction. There are two types of goals: learning orientation and performance orientation. Learning orientation develops competencies, and performance orientation demonstrates the competencies itself. Goal orientation and diligence are important in the development strategies since they reinforce each other and strengthen the other factors of ABCD model by providing motivation for success (Moon, 2016).

Chapter 3 METHOD

3.1 Methodology

The study uses qualitative analysis. The method employed for this research is an extensive literature review. This research is started by analyzing the existing literature review in the GVC field. All resources, data, and information, used in this research will be collected and extracted from secondary resources within public access such as official websites, publishers, press releases and published reports from the reputable institutions.

3.2 Context

3.2.1 Automotive Industry

Indonesia's automotive industry is one of the oldest and largest as well as a significant sector in the country. The automotive market shows positive indications with an increasing number of firms, rising workforce, and strong growth in value-added investment, and including expanding expenditure for research and human capital development.

Indonesia ranked fifth in Asia and first in ASEAN starting from 2014 for automotive sales. Indonesia and Thailand account for over sixty percent of the total market share in the ASEAN automotive market. In 2014, it was the first time for Indonesia to take over the first position in term of sales from Thailand. Indonesia's automotive market growth at an almost double-digit annually over the past ten years.

Automotive industry becomes one of the engines of the economic development for Indonesia. The government of Indonesia appointed automotive industry as the top

twenty-two main activities for Indonesia in the Master Plan Acceleration and Expansion of Indonesia Economic Development 2011-2025. The government of Indonesia sees a great potential for growth in the automotive sector. Therefore, it is worthed to analyze Indonesia's automotive industry. The capabilities of Indonesia to move up the head of automotive GVC will become the determining factor for the sustainable growth in this sector.

3.2.2 ABCD Model

ABCD model is the model developed to explain Korea's economic development. The four elements of ABCD model—agility, benchmarking, convergence, and dedication—can generalize in explaining other circumstances. The use of ABCD model in this research stands for its comprehensiveness as the analytical framework for formulating strategies. The ABCD model can give strategic guidelines for a country to achieve higher development.

The existing studies left some missing part in their analysis. ABCD model can fill those missing part and create a complementary yet comprehensive analysis from the existing analysis. Thus, the ABCD model is chosen as the analytical framework of upgrading analysis.

3.3 Research Design

The research is carried out in the five steps to answer all the research questions and meet the objective of the study. Each step came in sequence and interrelated with another. Initially, identify upgrading channels or trajectories from the existing studies. There are various trajectories for a country to involve more in the GVC. The

writer explores the trajectories from case studies of specific countries and theoretical knowledge as well.

Second, since the upgrading trajectories are still in the random order, the writer uses the analytical framework of ABCD model to reorganize the upgrading channels. From this step, the writer found that each of the studies did not comprehensive enough explaining the upgrading trajectories. There is some missing part in the ABCD model from each study. However, it should be underlined that not a single strategy is appropriate across all developing countries. Therefore, the next step is to make an analysis which strategies are suitable for the development of Indonesia in the upgrading process.

Third, the writer reconstructs the upgrading channels using the ABCD model. The result of this step is proposing four strategic development strategies for Indonesia to upgrade its participation in the automotive GVC. Each of the strategies represents one element in the ABCD model.

Fourth, the proposed strategic development strategies are still conceptual in nature. So that it is necessary to provide more actual action plans that Indonesia can pursue to achieve higher participation in the automotive GVC. Thus, there is a need to formulate specific action plans, which will be base on the sub-categories in the ABCD model. This step gives several action plans for Indonesia to enhance its participation in the automotive GVC.

Fifth, from the previous step there is one question that still has not been answered yet, which is which plan should come first and which one come later? The conceptual knowledge of ABCD model will be used to answer the question.

Chapter 4 ANALYSIS

4.1 How much do Indonesia participate in Automotive GVC?

One way to indicate the level of the participation of a country in the GVC is by looking at the GVC Participation Index. GVC Participation Index is taken from the OECD's Trade in Value Added (TiVA) data. Figure 3 shows Indonesia's index is relatively lower than developing and developed countries in the year of 2011. It indicates, in general, that Indonesia is less engaged compared to both other developing and developed countries.

Figure 3
Indonesia GVC Participation Index

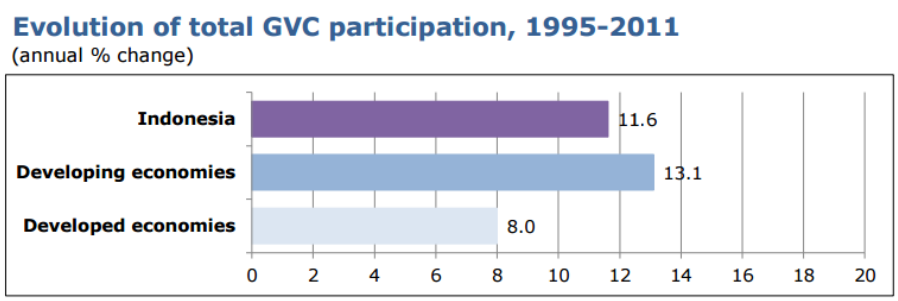
The GVC participation index, 2011
(% share in total gross exports)

	Indonesia	Developing economies	Developed economies
Total GVC participation	**43.5**	**48.6**	**48.0**
Forward participation	31.5	23.1	24.2
Backward participation	12.0	25.5	23.8

Source: WTO, 2015

Figure 4

Evolution of Indonesia GVC Participation

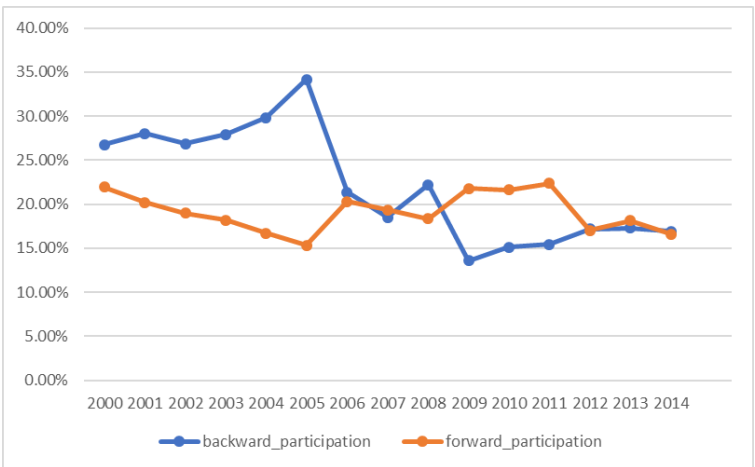


Source: WTO, 2015

However, between backward and forward participation, Indonesia has a higher index in forward linkages than backward. It means that Indonesia plays more role on activities toward the end customers, in another word in the sales and marketing activities.

Figure 5

Indonesia Automotive GVC Participation Index



Source: WIOD, 2016

Figure 5 shows the Indonesia's GVC participation index in the automotive industry. Start from the year 2009; there is an increasing trend in the backward participation. It means Indonesia starts to take more role in the process before the assembly of the vehicle production. It is a good sign for Indonesia because it shows Indonesia involved in the higher value-added activities. Meanwhile, forward participation index has a downward trend. However, it is still at the same level of the backward participation.

4.2 Strategic Direction for Indonesia Upgrading

As described in the previous chapter, ABCD model was used to explain the Korea's economic development. In this section, ABCD model will be used as an analytical framework to formulate upgrading strategies for Indonesia in the Automotive GVC.

Table 1 shows the summary of the existing studies. Later, the summary of the existing studies is reorganized by using the sub-elements of ABCD model. Table 2 indicates that the existing studies do not cover all the elements in the ABCD model. For example, a study from Gereffi et al. (2011) mainly talks only some part of the ABCD model, which are convergence and dedication only. Another study like Taglioni and Winkler (2014) more focus on the Agility and Dedication parts. Start from these findings that are none of the existing studies cover all the element in the ABCD model; this research formulates upgrading strategies by combining the upgrading trajectories mentioned in the previous studies by using all the elements of the ABCD model. Therefore, the strategies that are proposed at the end will become more comprehensive than the other existing studies.

The following section discusses the upgrading channels by scholars from the existing studies using the each element of the ABCD model:

Table 1

Summary of Existing Studies

No	Article	Opennes Environment	Infrastructure	Quality of IFDI	Global Supplier	Innovation Development	Specialisation	Cluster	Foreign Market	Global Standards	Skill	Knowledge	Higher Productivity
1	UNCTAD Report (2013)	v	v		v	v	v	v		v	v	v	v
2	Gereffi and Guler (2010)	v	v		v				v		v	v	v
3	Humphrey and Memedovic (2003)	v	v						v	v	v		
4	Gereffi (2015)					v	v		v		v	v	v
5	OECD Report (2013)	v		v			v				v		
6	Taglioni and Winkler (2014)	v	v	v							v	v	v
7	Sturgeon et.al. (2016)				v	v	v						v
8	Gereffi et.al. (2011)							v	v	v	v	v	
9	Mayrhofer and Colovic (2009)							v	v		v	v	
10	Sturgeon and Biesebroeck(2011)	v		v	v	v	v	v		v			v
11	Gereffi and Sturgeon (2013)				v	v	v						
12	Cattaneo et.al. (2013)	v	v	v			v		v	v			v
13	Memedovic, UNIDO (2004)	v		v							v		
14	Humphrey (2004)					v	v	v	v	v			
15	GIULIANI et.al. (2005)							v	v				
16	Cheng (2015)	v	v	v		v	v				v	v	v

Source: Author, 2017

Table 2
Summary Literature Review using ABCD Model

No	Article	Agility			Benchmarking			Convergence			Dedication		
		Speed		Precision	Learning		Best Practice	Mixing		Synergy Creation	Diligence		Goal Orientation
		Opennes Environment	Infrastructure	Quality of IFDI	Global Supplier	Innovation Development	Specialisation	Cluster	Foreign Market	Global Standards	Skill	Knowledge	Higher Productivity
1	UNCTAD Report (2013)	v	v		v	v	v	v		v	v	v	v
2	Gereffi and Guler (2010)	v	v		v				v		v	v	v
3	Humphrey and Memedovic (2003)	v	v						v	v	v		
4	Gereffi (2015)					v	v		v		v	v	v
5	OECD Report (2013)	v		v			v				v		
6	Taglioni and Winkler (2014)	v	v	v							v	v	v
7	Sturgeon et.al. (2016)				v	v	v						v
8	Gereffi et.al. (2011)							v	v	v	v	v	
9	Mayrhofer and Colovic (2009)							v	v		v	v	
10	Sturgeon and Biesebroeck(2011)	v		v	v	v	v	v		v			v
11	Gereffi and Sturgeon (2013)				v	v	v						
12	Cattaneo et.al. (2013)	v	v	v			v		v	v			v
13	Memedovic, UNIDO (2004)	v		v							v		
14	Humphrey (2004)					v	v	v	v	v			
15	GIULIANI et.al. (2005)							v	v				
16	Cheng (2015)	v	v	v		v	v				v	v	v

Source: Author, 2017

4.2.1 Agility: Promoting Acceleration Development of Foreign Investment

The agility of the ABCD model is related to the speed and precision. The role of transnational companies is one of the key drivers for the development of GVC. Transnational companies integrate their production more closely within regional and global by their foreign direct investment (FDI) (Humphrey, 2004). Because of that, global level of FDI has risen rapidly starting from the 1980s. This has led to the increasing interest in the fragmentation of production and in a vertical specialization that result in the growth of trade in parts and components (Hummels et al., 1998). FDI can speed up the possibility of participating more in the GVCs.

There are several ways to enter GVCs either by facilitating domestic firm's entry to the chains or by attracting FDI from foreign players. By FDI, countries can have bigger possibilities to get direct access to foreign expertise and technology. Costa Rica and Thailand can become a good example of a country that using FDI as their development strategy. One thing should be underlined, it is important to have excellent infrastructure, streamlined export procedures, and a tariff-friendly environment to attract foreign investment to come to the country. Creating export-processing zones (EPZs) is one effective way to attract foreign investment come to the country, especially when the country has the bad infrastructure and high import tariff (Taglioni and Winkler, 2014).

To be part of the GVC a country also need to improve their connectivity with international markets. Bad connection creates high costs, high uncertainty, and low

speed. As the ability to participate in GVC depends as much on the capacity efficiently import inputs as on the capacity to export products (Cattaneo et al., 2013), it is important to broaden the scope not only focus on export barriers but also include import barriers. Domestic market connectivity is as important as international connectivity. Therefore, Indonesia should not only focus on loosing up the barrier at the border, but also concentrate on improving the connectivity of domestic markets and enhancing the efficiency of the internal segment of the supply chain.

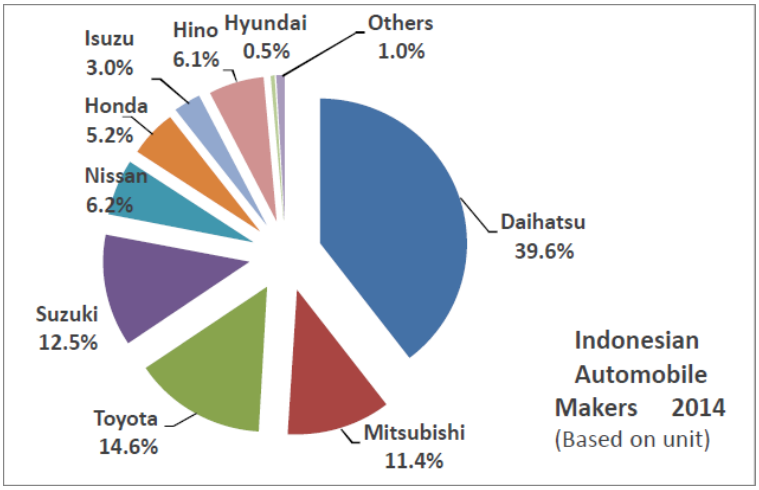
Openness regulation is also essential to attract foreign firms from other countries, especially foreign investment regulations. Openness investment regulation indeed speeds up the possibility to attract more foreign investor from different countries other than Japan. On December 28, 2016, the Government of Indonesia established a new regulation related to the incentives for a foreign investor in the industrial zone. The new regulation is hoped to turn the heads of investors, by offering tax and regional incentives. The purpose of the regulation is to attract investors and help the growth of industrial zones across the country

Also, other dimensions beyond connectivity need to put into account when formulating policies to attract FDI and facilitate domestic firms' participation in the GVC. Other key factors should be considered the sophistication and competitiveness of local firms. Having large and competitive companies is beneficial to attract FDI. It fosters domestic firms' participation in arm's-length trade as turnkey suppliers (Taglioni and Winkler, 2014). However, for countries without large companies in the industry and only rely on small and medium enterprises find it harder to attract FDI. One way for the country is by having a well-established and integrated industrial cluster (Porter, 1990).

Only focus on the speed is not a complete strategy. Precision should be added, and it is related to the quality of the FDI. Attracting "the right" foreign investors to come also a necessary strategy for the development (Taglioni and Winkler, 2014). Indonesia should be able to find the right investor to participate more in the automotive GVC. Assessing the nature of investment of foreign investor as well as their motivation of the FDI is the first thing Indonesia should do. By doing that, Indonesia can assess the technology contribution and technology gap between the foreign firms and local firms. Furthermore, attracting "the right" investor also means to attract FDI in higher value added activities. Thus, Indonesia can achieve improvement in production facilities and work technologies.

Related to this strategy, Indonesia already in the right track. As shown in Figure 6, Six global firms from the top 19 global automotive industry operate in Indonesia and have the biggest production vehicles in 2014. They establish the assembly plants of the finished vehicle in Indonesia and sell it mostly in the domestic market. All of the automakers in Indonesia are Japanese automakers. Those Japanese automakers are the leading companies in the automotive industry (Table 3). Therefore, their existence in Indonesia opens up opportunities for Indonesia to move up at the automotive GVC.

Figure 6
Automobile Production in Indonesia



Source: Minister of Industry Indonesia, 2015

The next step for Indonesia is to increase the level of investment from the Japanese automakers, especially in higher value-added activities rather than only on increasing the plant capacity. Indonesia should attract bigger Japanese player to invest more in Indonesia. The main activity of Japanese automakers in Indonesia is producing finished vehicles for domestic market selling. Because of the Japanese automakers operate in Indonesia; it is easy for Indonesia to enter the automotive GVC and have huge potential to upgrade its participation. As Taglioni and Winkler (2014) emphasize simply joining GVC is not sufficient for development. Therefore, Indonesia should upgrade its involvement in automotive GVC by attracting more FDI, either from Japanese investor or from other countries.

Table 3
TOP 19 Global Automakers

Rank	Company	Country	Units Produced (thousands)	Share
1.	Toyota	Japan	10,475	11.5%
2.	Volkswagen	Germany	9,894	10.9%
3.	General Motors	USA	9,609	10.6%
4.	Hyundai	South Korea	8,008	8.8%
5.	Ford	USA	5,969	6.6%
6.	Nissan	Japan	5,097	5.6%
7.	Fiat	Italy	4,865	5.4%
8.	Honda	Japan	4,513	5.0%
9.	Suzuki	Japan	3,016	3.3%
10.	Peugeot	France	2,917	3.2%
11.	Renault	France	2,761	3.0%
12.	BMW	Germany	2,165	2.4%
13.	SAIC	China	2,087	2.3%
14.	Daimler	Germany	1,973	2.2%
15.	Changan	China	1,447	1.6%
16.	Mazda	Japan	1,328	1.5%
17.	Dongfeng	China	1,301	1.4%
18.	Mitsubishi	Japan	1,262	1.4%
19.	BAIC	China	1,115	1.2%
Total from companies manufacturing more than 1m units			**79,813**	**87.9%**
Global total			**90,717**	**100%**

Source: OICA 2014 in Sturgeon, 2016

Investment from Japanese firms gives a positive impact on Indonesia's automotive industry. As the assembly activities happen in Indonesia, many local suppliers get a chance to supply their product to those Japanese automakers. Japanese automakers are strict for the quality of the inputs for their production. Therefore, Indonesia's suppliers should be able to comply with the requirements from the Japanese automakers. By this, directly or indirectly there will be a learning effect for Indonesia's suppliers because they are being forced to increase or upgrade the quality of their products to meet the certain requirements.

Japan not only invests in the automobile production but also in the improvement of supporting area. In 2016, the Japanese and Indonesian government reached an agreement to build up the Patimban deep-sea port, which located in West Java. The government of Japan agreed to put investment amounting USD 1.7million. One of the purposes of this collaboration is to increase logistic efficiency in Indonesia,

especially for automotive industry. The Patimban port case shows a good example of amplification effect of participation in GVC. Once the establishment of the port is done and ready to operate, it is likely to improve local production not only in the automotive sector but also in other areas and the not-GVC economy (Taglioni and Winkler, 2014).

In the beginning, Japanese automakers came to Indonesia focus more on the assembly activities only. Some parts and components that are not available in Indonesia are still imported from Japan or other countries. For example, the input of steel for vehicle production still imported directly from Japan because of the quality differences. Japanese steel company in recent year has invested in building up their steel factory in Indonesia. They do it to come closer to their major supplier that is Japanese automakers in Indonesia. The similar example also happens in plastic sector. Plastic is used as an input for the parts and components of the finished vehicle. Both cases show that participation in one GVC can bring the opportunity of investment to other related sectors or industries.

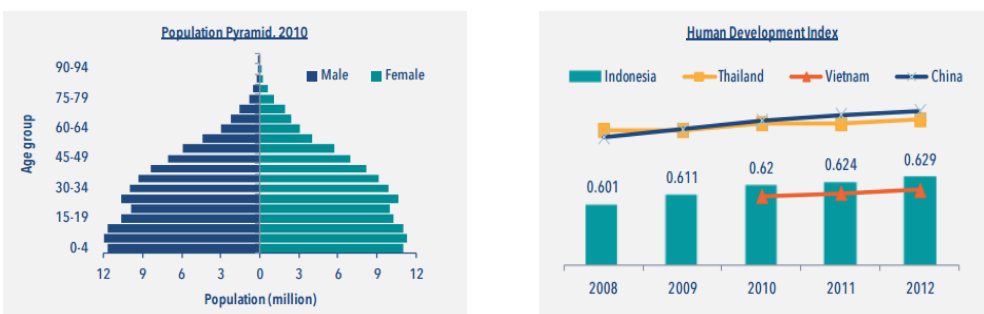
Having more investment is also beneficial for Indonesia to move to higher value-added activities or sectors. Shifting to higher value added activities also happened within the automotive GVC in Indonesia. Indonesia successfully attracts one of the top Japanese automakers to put investment for research and development (R&D) activities in Indonesia. The Japanese automaker believes that their action will benefit both sides. The purpose of building up R&D center is to study more about local demand, in particular with the newest type of car LCGC.

It is also important for Indonesia to attract more investment from the Japanese automakers itself. Additional investment from the Japanese firms can increase the production capacity in the local production. Higher production capacity leads to bigger market opportunities both in domestic and foreign markets. Indonesia's local market show promising growth. Figure 7 demonstrates that Indonesia has the high young population and also increasing Human Development Index (HDI). Both trends indicate that Indonesia has huge market potential. Other than that, the additional production also can increase the opportunities and capabilities of Indonesia to extend their export capacity.

However, it is important to remember that only dependent to one particular investor will not bring prosperity in the long term. Therefore, Indonesia should be able to attract foreign investor from other countries as well. With the local characteristic that Indonesia has, attracting the emerging automakers from China and India may become a viable strategy.

Figure 7

Indonesia's Population and Human Development Index



Source: Indonesia's Central Bank in Pardede, 2013

4.2.2 Benchmarking: Moving to Higher Value Added Activity

Since Indonesia already entered the automotive GVC, the next strategic development strategy should be related to expanding and strengthening the GVC participation. Targeting specific activities including key upstream links or inputs can be one of the effective ways to strengthening the GVC participation (Gereffi and Sturgeon, 2013). By having one specialization in GVC niches area give a bigger opportunity to take more role on the global or regional production network as the global supplier. To be able to move to the higher value added activities, Indonesia should have capabilities to do so. Therefore, the learning process is an essential element for Indonesia.

One good example of this case is Philippines specialization in producing wire harness. Philippines is well-known as the biggest wire harness suppliers in the SEA region and major producers in the global markets. Focusing on specific components of the automobile production gives opportunities for the Philippines to move forward. It accelerates export capacity of the automotive parts and components. It also strengthens and integrates to the upstream linkages. Indonesia can benchmark Philippines case in a sense to focus on one niche activity in the automotive GVC and let Indonesia become the center supplier of the product.

The local parts and components market in Indonesia has a big chance for the competitiveness improvement and upgrading. The automotive industry in Indonesia is predicted to continue to grow over the next couple of year even decades. There will be a direct impact on other supporting industries in the country including the automotive components industry that provides automakers with the necessary components for assembling vehicles. With high young population and increasing middle-level group, car sales are predicted continue to grow. Other than that, as

vehicles get old, routine maintenance and repairs will become required for vehicles to remain in drivable conditions. As a result, the need for automotive parts in the region will continue to increase over the next couple of years.

Foreign manufacturers, especially from Japan, dominate first-tier manufacturers in Indonesia's automotive industry. They produce all necessary parts and components for the vehicle automakers (OEM). The first-tier manufacturers get supply from the second and third manufacturers. Second and third manufacturers are a formidable potential market force for Indonesia suppliers to focus because of the increase ability to play in the high-value components that are not dominated by first-tier firms. Thus, second and third-tier suppliers have high upgrading potential.

Targeting the right parts and components for second and third-tier manufacturers is a difficult task. If done correctly, it gives a significant impact on the upgrading of second and third-tier manufacturers. Beside serve domestic demand with a high-quality product, products produced by this manufacturer will also be able to compete in foreign market because they meet certain quality of the product.

Therefore, it is a good strategy for Indonesia to focus on becoming second and third manufacturers. If Indonesia can produce high valuable and special components with acceptable standards and supply it to the OEM in the local market, later Indonesia can open an opportunity to start export high valuable components to foreign markets. One of the ways to assess industrial upgrading for export-oriented economies is to look at the shifts in the technology content of their exports over time (Gereffi and Guler, 2010). In the end, Indonesia can reach higher participation in automotive GVC and move to the head of the GVC as well in the parts and components sector.

Table 4 shows exports of parts and components from Indonesia to their trading partner. There is some fluctuations growth between the period year 2009 to 2013. The parts and components that have the biggest export growth are cluthes and parts of motor vehicles with the 44. 67 percent of export growth rate and the second largest is shock absorbers for motor vehicles with the growth 37.24 percent. However, based on the volume of export, transmissions has the biggest amount of export in dollars.

It means transmission produced in Indonesia has a competitive advantage in the regional market and some other Asian countries. Therefore, Indonesia can choose transmissions items as their specialization area, and make Indonesia as the lead suppliers of transmissions production and export it to the region and other countries.

Table 4

Development of Automotive Parts and Components in Indonesia

HS Code	Product label	2009	2010	2011	2012	2013	% Change 12-13	% Trend
'870840	Tansmissions for motor vehicles	245,624	320,100	236,374	430,503	376,038	-12.65	12.17
'870870	Wheels including parts and accessories for motor vehicles	171,185	249,903	256,248	281,610	278,067	-1.26	11.51
'870899	Motor vehicle parts nes	153,073	166,577	157,222	210,633	249,617	18.51	12.89
'870829	Parts and accessories of bodies nes for motor vehicles	80,866	97,422	106,010	120,742	136,986	13.45	13.53
'870850	Drive axles with differential for motor vehicles	54,404	112,867	111,328	149,782	101,962	-31.93	16.64
'870891	Radiators for motor vehicles	76,796	93,228	91,221	94,608	93,690	-0.97	4.21
'870893	Clutches and parts for motor vehicles	15,292	51,310	55,774	79,889	77,668	-2.78	44.67
'870830	Brakes and servo-brakes and their parts, for tractors, motor vehicles	-	31,904	32,600	33,141	37,985	14.62	-
'870895	Safety airbags with inflator system and parts thereof, for tractors, m	-	4,805	13,278	18,636	21,005	12.71	-
'870880	Shock absorbers for motor vehicles	5,638	8,545	13,363	23,193	16,664	-28.15	37.24
'870894	Steering wheels,steering columns and steering boxes for motor vehicles	7,562	17,780	22,238	17,558	14,344	-18.31	13.52
'870810	Bumpers and parts for motor vehicles	10,349	13,292	16,611	13,613	10,370	-23.82	0.28
'870892	Mufflers and exhaust pipes for motor vehicles	1,612	2,558	2,596	2,545	1,957	-23.10	3.90
'870821	Safety seat belts for motor vehicles	644	422	524	507	1,402	176.53	19.00
'870860	Non-driving axles and parts for motor vehicles	-	-	-	-	-	-	-
'870831	Mounted brake linings for motor vehicles	21,431	-	-	-	-	-	-
'870839	Brake system parts nes for motor vehicles	-	-	-	-	-	-	-

Source: ICT calculation based on UN Comtrade statistics, in Minister of Trade, 2014

Based on Humphrey (2004), there is at least two advantage for countries, which use export-based strategies in for upgrading in the GVC. First, firms from the exporting countries can offer a greater range of capabilities embedded in the products sold to their initial customers. Second, exporter firms can open opportunities to become a supplier for a company that has fewer skills than the exporter firms.

Entering export market for the first time is a major challenge for many firms in developing countries, and it requires new skills and knowledge, such as bureaucratic procedures, national standards or requirements, marketing channels and consumer tastes (Humphrey, 2004). Components that produced in Indonesia may not meet the requirements in the foreign market so that need to have some adjustment. The process of the adjustment to meet the different requirement in the foreign market is the learning process for the Indonesia's suppliers, which is essential for the development.

Becoming a global supplier that supply products for many markets frequently entails firms to do the production in various locations as well. Two reasons can explain this phenomenon (Humphrey, 2004). Firstly, transportation cost and need to respond quickly to the market changes can become the major reason why production should be located close to the final market. Another possible reason is due to the trade barriers. Trade barriers such as national (regional) local content requirement and quota restrictions create globally fragmented value chains.

Later as they grow and have their position in the foreign market, Indonesia's suppliers of the specific parts and components should strengthen their position by outward FDI in the foreign market. The motivation of the FDI can vary. However,

the first goal should be for technology learning so that they can gain more benefit from the developed countries. Sturgeon and Biesebroeck (2011) argue that export-led strategy, give a faster technological learning relatively than to the more home-grown lead firms. Sturgeon and Bieselbroeck (2011) claim that export-led strategy gives faster absorption of global best practice.

Another possible motivation for Indonesian firms doing outward FDI is market learning. This motivation is affected by the characteristics of the local consumers (Yin, 2015). It is related to meet the standards that Indonesian firms should meet in the foreign market. An example of this motivation is the case of Korea in the electronic sector. Korean firms established foreign production facilities to learn the sophistication local customer tastes or access to the design capabilities (Moon, 2007).

Follow the customer motivation (Moon, 2001) is also the reason why Indonesian should do outward FDI. As mentioned before, major buyers of Indonesian suppliers are Japanese lead firms or Japanese Tier 1 suppliers. Those companies do not only have production process in Indonesia but also at different locations. Therefore, Indonesian firms may follow those Japanese companies abroad to keep the strong relationship.

Wortzel and Wortel, (1981) shows upgrading trajectory in the industrial sector based on East-Asian experience in the four different stages. Indonesia can follow this path as the reference for the development. First, the exporting firms started as assembly manufacturers. In this stage, they only focus on production alone and often follow buyers' specification and using materials supplied by the buyer. The second stage is an original equipment manufacturer (OEM). Within this stage, the suppliers take a

wider range of manufacturing activities (functions), such as taking charge of the sourcing inputs or logistics functions. However, buyer side still handles the design and marketing function. The third step is original design manufacturer (ODM). Not only focus on the production function, but also take a higher level of function that is designed function, which can be done in collaboration with the supplier. The last upgrading stage is becoming original brand manufacturer (OBM). In this final stage, the exporting firms no longer rely on their buyer. They have their brand and responsible for all the activities from designing until distributing it to the end consumers.

The upgrading strategy developed by Wortzel and Wortzel (1981) in the industrial sector is based on the premise that companies in the developed countries seek suppliers in the developing countries. They work together to improve both capabilities. The firms from developed countries are often leading global manufacturers looking to outsource production to low-cost locations.

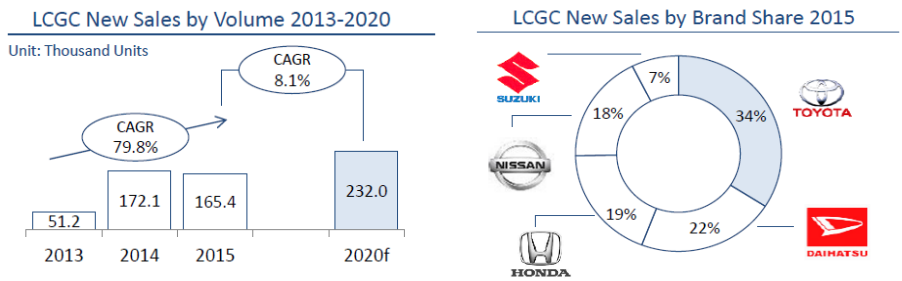
From the model in figure 2, it is necessary for Indonesia's local suppliers to acquire certain capabilities at the first time. Later, the firm tries to find a foreign buyer who needs the product that embodied the capabilities. Once firms obtain new capabilities, they need to reach a new market. Sell the products in the markets and interact with customers can stimulate processes of learning. It is better for firms to change the way they enter or participate in GVC so that they can use their capabilities once they have developed their technologies. Another way is to put buyers as the center of upgrading trajectories as well. By doing this, it can create new export opportunities and later will spark the process of rapid export-oriented development (Humphrey, 2004).

Another alternative strategy for Indonesia is supporting "Product Champion." Indonesia can learn from Thailand case. Thailand used "Product Champion" strategy to attract more FDI. Thailand chose pick-up cars and eco-car as their "Product Champion" (Sturgeon et al., 2016). In response to this strategy, Japanese automakers, Toyota and Isuzu, moved their global production plants from Japan to Thailand.

Potential "Product Champion" which have a great prospect for Indonesia is Low-Cost Green Cars (LCGC). LCGC that introduced first time in 2013 received a warm welcome from Indonesian domestic market. LCGC has been very successful from its first launched and is expected to remain a key driver of new passenger vehicles sales through to 2020 (figure 8). LCGC has experienced significant growth, today accounting for until 20 percent of total PV new sales. LCGC is an attractive vehicle due to the low entry-level price. LCGC price is lower than any other MPV. It makes LCGC affordable vehicles for the first time car buyers. From the production side, lead firms also have favor in making this type because of the exemption from the luxury tax scheme.

Figure 8

LCGC Sales and Automakers



Source: Scherer, M. et al., 2016

Looking up the high potential market of LCGC, Indonesia should take advantage by choosing LCGC as their specialty. Indonesia should be able to invite lead firms to

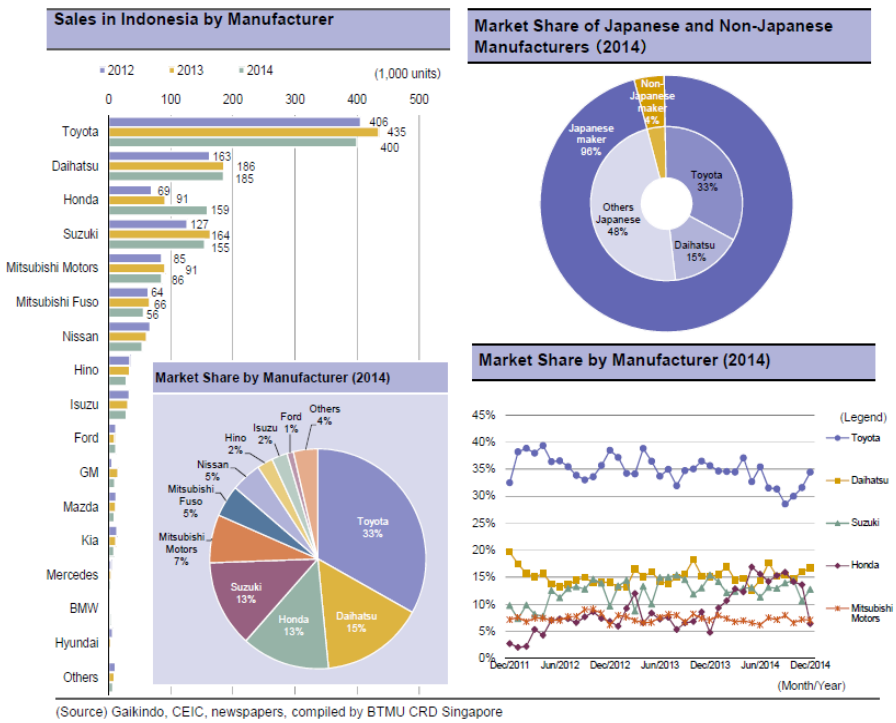
collaborate to manufacture LCGC car. The aim of the production should not only focus on the domestic market but also should expand it at least to the regional market. To do that, Indonesia should attract those lead firms who produce LCGC to establish an R&D center for the LCGC. By doing it, Indonesia can learn all the technologies and knowledge from the lead firms. As a result, Indonesia can become the production and R&D base for the LCGC in the SEA region.

4.2.3 Convergence: Strengthening Regional Connectivity

One drawback in Indonesia automotive industry is Indonesia highly relies on Japanese automakers. Figure 9 indicates top nine sales of foreign automakers in Indonesia are all from Japanese companies. More on that, 90 percent of the market share is dominated by Japanese automakers, with Toyota has the biggest share (33 percent). As mentioned in the previous "A" part, having a massive investment from foreign investors is beneficial for Indonesia. However, if Indonesia keeps relying on one specific country, it will limit the chance to play with other foreign players. Indonesia automotive industry at this stage may be trapped in the situation where they cannot grow further. It is because if Indonesia only becomes suppliers for Japanese companies, the inputs (parts and components produced) are highly specialized for Japanese cars. It may lower the prospect to export those parts and components to other countries' firms due to the different standards. If Indonesia manages to provide fully integrated systems that can fit into various types of cars, Indonesia can become suppliers for different companies and capture more value.

Figure 9

Sales of Automobile Manufacturers in Indonesia



Source: Scherer, M. et al., 2016

Therefore, to avoid being trapped Indonesia should start to diversify their automotive industry. Indonesia local industry needs to work with other manufacturers from different countries. Automakers from other Asia countries such as growing automakers from China and India seems promising for Indonesia market. At this moment, Chinese and Indian automakers are still falling behind compared to Japanese and Korean automakers. However, with the characteristics that the both companies have, they have potential to grow and gain bigger market share in the global automotive industry, especially in Indonesia market. It will be a great

milestone for Indonesia, China, and India if they can grow together as automakers and supplier to become lead firm and lead supplier.

It is important to have an industrial cluster in the country to achieve higher efficiency in production. Indonesia automotive industry itself has well-established clusters that focus especially on the automotive industry. The Indonesian automotive cluster is a highly visible feature of the global-local production organization, and it has become prominent amongst automotive cluster in South East Asia (Irawati, 2010). The automotive industry in Indonesia is centered on the West Java Region, which consists of Banten, Jakarta and West Java provinces. Central and East Java become sub location for the automotive cluster in Indonesia (Figure 10).

Figure 10

Indonesia's Automotive Cluster

Source: Pardede, 2013

Unfortunately, the Indonesian automotive cluster has developed as an extension of Toyota and Honda keiretsu (Irawati, 2010). It means that the organization of the clusters consist of Japanese automakers as the lead firms, Japanese-owned Indonesian companies, and the Indonesian subcontractors (tier two and three

suppliers). Thus, the clusters are concentrated on Japanese-style production and their standards as well. Because of they have developed well in these clusters, other foreign firms find obstacles to come in if they are not part of the Japanese chains. At this moment, this style of organizations works well to boost Indonesian automotive industry. Nevertheless, it is questionable whether this kind of network can operate well in the long term for Indonesian automotive industry. It is better for Indonesia to prepare itself by building up knowledge and innovation of their own, not mainly depends on Japanese automakers. Other than that, having more engagement with other foreign firms (as mentioned before, China and India) can be the way to be considered as well. More on that, due to the importance of the automotive industry to the Indonesia manufacturing sector, the government of Indonesia strives to achieve further growth. Minister of Trade Indonesia said that the implementation of ASEAN Economic Community (AEC) open up opportunities for Indonesia automotive industry. AEC will intensify the regional trade and broaden export capacity in the region.

Indonesia has huge opportunity to become the largest automotive market and production base in AEC. Figure 11 shows that within SEA region, Indonesia is in top two automobile manufacturers. With the total number of productions, keep increasing year-by-year. If Indonesia keeps continuing the growth of production, it is possible to take over Thailand position as the biggest automobile producer in the region. Also, with the production capacity in Thailand is reaching the maximum rate,

many lead firms operating in Thailand start looking other production destinations within regions.

Figure 11
Automobile Production in Asian Countries

Automobile Production Ranking in 11 Asian Countries
(1,000 units)

Country	2009	2010	2011	2012	2013	2014	(YoY)	CAGR (2009-2014)
China	13,763	18,265	18,419	19,272	22,117	23,723	(7.3%)	11.5%
Japan	7,935	9,629	8,399	9,943	9,111	9,775	(7.3%)	4.3%
South Korea	3,513	4,272	4,657	4,558	4,522	4,525	(0.1%)	5.2%
India	2,628	3,529	3,935	4,142	3,874	3,839	(-0.9%)	7.9%
Thailand	999	1,645	1,458	2,429	2,457	1,881	(-23.5%)	13.5%
Indonesia	465	703	838	1,057	1,208	1,296	(7.3%)	22.8%
Malaysia	489	568	534	570	601	596	(-0.8%)	4.0%
Taiwan	226	303	343	339	339	379	(12.0%)	10.9%
Pakistan	109	153	162	160	142	149	(4.6%)	6.3%
Vietnam	113	112	108	99	110	121	(10.1%)	1.5%
Philippines	63	80	65	75	80	89	(11.1%)	7.3%

(Source) Automobile Industry Association of respective country, CEIC, newspapers, compiled by BTMU CRD Singapore

Source: Scherer, M. et al., 2016

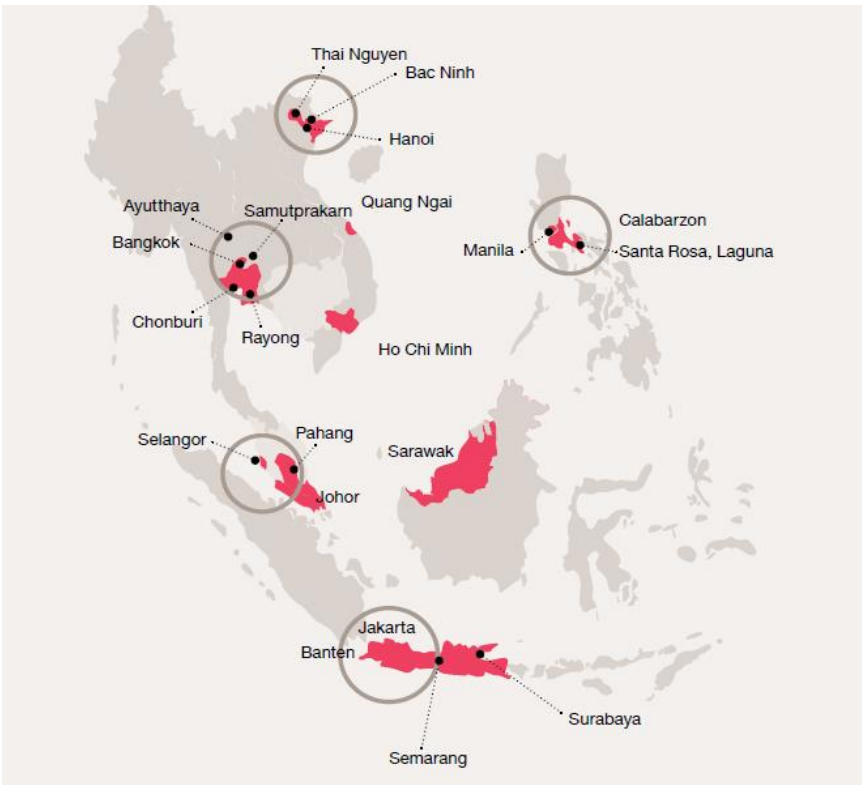
Furthermore, Indonesia should be able to become the vital hub for automotive industry neither as assembly center nor as parts and component suppliers. The possibility of Indonesia to become a vital hub for the regional automotive industry depends on several factors. The technology content or sophistication of the domestic vehicle assembly and components, efficiency of the logistic, and infrastructure are an example of factors that will determinant the successfulness to become the leader in the region. More on that, Indonesian labor also will become one key determinant factor.

Each of the member countries participation in AEC should focus on capturing higher value added activities to create a sustainable regional value chain in Southeast Asia, as well as in global economy. It can be done by upgrading capability of the firms in

each country. Human capital or workforce from each member countries play a vital role in increasing firm capabilities. Therefore, human capital development is a necessary ingredient for achieving this goal. Also, in the long run not only focus on serving value chain within the region which led by the lead firms, but AEC members should also start looking opportunities to create AEC own chain in the foreign market.

Figure 12

Key Automotive Industrial Zones in Southeast Asia



Source: PwC, 2015

The previous section suggests the implementation of AEC should move toward a formation of the regional value chain. There are several action plans that Indonesia and other countries in the region should work on together. First, creating equal power relationship is important. It is necessary to generate common standards to have

smooth coordination in the regional value chain. The harmonization of standards among AEC member countries is a prerequisite particularly to become production base.

GVC put more importance in trade of intermediate goods between firms or countries that are included in the value chain. This makes connectivity is a necessary condition to ensure goods flowing timely within the chains. The AEC implementation should improve the transportation system, logistics and ICT infrastructure within and between its member countries to realize a borderless region. It needs to establish a production base and gain benefits through a creation of backward linkage to each domestic economy.

Sturgeon and Biesebroeck (2011) points out that the experience of successful suppliers in developing countries suggests that three objectives have to be achieved to become lead suppliers: the first goal is to achieve worldwide quality standards, the second goal is to improve productivity, and the third goal is firms should acquire design capabilities. To become a global supplier, Indonesia should achieve and meet the standard requirement in the foreign markets. Having products that comply with the global standards open the door to penetrate the foreign market and work together with foreign buyers.

Humphrey (2004) points out that working with global buyers is a way to invest in upgrading the capabilities of developing countries firms. A country should have products that acceptable in the foreign market so that they can do the export. However, in Indonesia case, a vehicle produced in Indonesia mostly for domestic

consumption, which only around twenty percent of the total production for export. Thus, elevating the export capacity is necessary for Indonesia.

4.2.4 Dedication: Human Capital Development

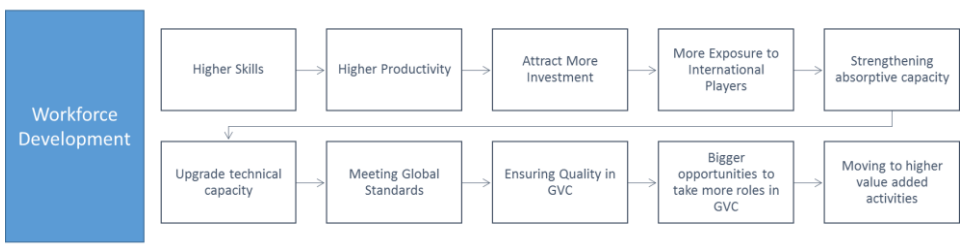
Gereffi et all. (2011) point out those developing countries that participate in the GVC must overcome their deficiencies in the workforce development system; otherwise, developing countries will lose their opportunity to integrate beneficially into the global economy. It indicates that it is necessary and important for a country to put their workforce development in the highest priority for the upgrading strategies. Humphrey and Schmitz (2002) also mention that economic upgrading requires the availability of new skills and knowledge. It can be by increase the skill content of the country's activities or develop competencies in a niche market segments.

Formulating workforce development strategies is necessary for Indonesia in the context of the shifting upgrading dynamics of GVC. Upgrading the workforce skills is needed for Indonesia to participate more in the global economy. According to the definition of the World Bank's Skills toward Employability and Productivity framework, workforce development relates to the build and upgrades job-relevant skills. Psilos and Gereffi (2011) defines workforce development as converting process of human capital endowment into a source of competitive advantage in a territory. It needs a collaboration between all stakeholders such as governments, businesses, education and training institutions, and other labor force intermediaries. All of them together can give a strong development path for an advancement of the human capital.

A skilled employee is a vital competitive asset for industry upgrading. Having appropriate skills is essential to upgrading. Having higher skilled workforce boost up country's opportunity to take more roles in higher value added activities. A country should have an "upgradable" individuals who can quickly adapt to the changing demands of the global markets (Gereffi, 2011). Developing skills is a fundamental element of country's competitiveness. It determines the ability of a country to participate in GVC and open opportunities for upgrading in the GVC.

Figure 13

Workforce Development Flowchart



Source: Author, 2017

Figure 13 shows the reason human capital development should become the core basis of the upgrading strategy for Indonesia. Human capital development improves the skills of the labors. Higher skilled labors lead to the improved productivity of the firms. It is easier for a country to attract foreign investor when they can produce many products efficiently. On this point, the country has more chance for exposure to the international players. Thus, it is vital to strengthening the absorptive capacity of the foreign players. Once again, the workforce will have an important part in this stage. By the technology spillover, there will be a technical capabilities upgrading. As a result, the firms in the country can ensure the quality of the products they produced and meet the global standards. If the country has achieved at this level,

there are bigger opportunities to take more roles in the GVC by moving to the higher value added activities.

Preparing workforce development is not an easy job. There is a challenge in determining the right skills should be prepared for the future job, which does not yet exist. Gereffi et al., (2011) argue that GVC analysis can guide developing countries related to future skills needed and underline the key workforce development initiatives that developed and developing countries have taken to achieve the upgrading.

Gereffi et al. (2011) conduct a study to link the condition of workforce development within developing countries and the upgrading requirements of GVC. Gereffi et al. (2011) summary workforce development trajectories for the upgrading in GVC into 1. Workforce Skills, 2. Stakeholders and Institutions, 3. The Role of Global Standards. Table 5 show the summary of Gereffi et al. findings.

Table 5

Workforce Development Trajectories

A. Workforce Skills 1. Appropriate worker skills are essential to industry upgrading 2. The focus of workforce development must reflect both local needs and those of the global economy 3. A new and evolving set of workforce skills is needed to participate in GVC 4.Required skills and workforce development needs vary substantially by stage within industry-specific upgrading trajectories 5. Worker needs "soft-skills" in today's world of work 6. In developing countries, managerial skills for GVCs are in short supply 7. Upgrading in GVCs requires more and better professionals and technicians in bottleneck positions
B. Stakeholders and Institutions 1. Local education system currently do not provide skills required by GVCs 2. Technical training institutions and universities should coordinate more closely with industry stakeholders 3. New actors can provide the skills required by GVCs

4. Private sectors intermediaries can facilitate upgrading and workforce development 5. Public-private partnerships have emerged as an efficient and effective method for workforce development
C. The Role of Global Standards 1. Global standards define the upgrading requirements for the local workforce 2. Multi-stakeholder partnership in developing countries coalesces in response to global standards. 3. National certification of skills can be a powerful tool for GVC labor markets in developing countries.

Source: Gereffi et al., 2011

Based on Table 5, Indonesia should focus on three elements when formulating development strategy. First, workforce skills are essential for upgrading. Indonesia should be able to prepare appropriate skills that are needed in the industry. Also, the preparation of the skills itself should focus both domestic and global need. Since in Indonesia, lead firms of automakers are all foreign firms, Indonesia should develop their workforce by also considering the need and demand for those firms not only by local demand. It is necessary because lead firms will require some certain standard to comply to work with them. Failure to meet the standards will make Indonesia lose its attractiveness to the foreign firms. The workforce who can adapt in a timely manner to the demand shift of the global markets is valuable in the GVC arena.

More on that, Indonesia should not only focus on hard skill development only. To participating more on the automotive GVC, development of soft skills and managerial skill are also needed. Soft-skills such communication and teamwork are necessary to perform the daily work. Those soft skills and managerial skills significantly increase productivity and adaptability to the changing environment (Gereffi et al., 2011).

Second, the relationship between private sector and educational institutions should be strengthened. Industry collaboration and coordination have proven effective to match skills training to relevant needs (Gereffi et al., 2011). A healthy workforce development is the result of good collaboration among private sector, an industry association, educational institutions, and government.

Third, Indonesia should set meeting global standards as the goal of workforce development. Lead firms have the power to decide standards and local producers must comply with those standards. That also happen in the automotive industry in Indonesia, Japanese automakers have high standards requirements for their products. Many parts and components are still imported because products produced in Indonesia does not meet their standards. If Indonesia can meet the requirement standards, Indonesia will have a bigger role in the automotive GVC.

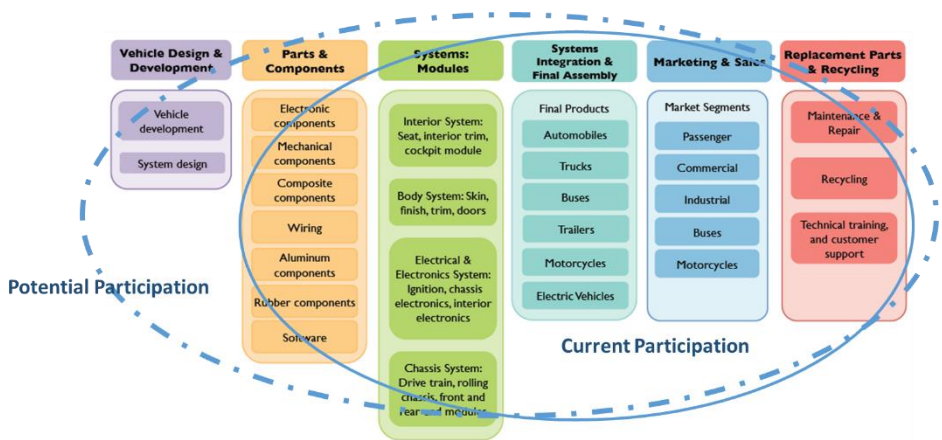
4.2.2 Summary of the Proposed Strategies Upgrading in the Automotive GVC

The previous section has mentioned in detail potential upgrading channels for Indonesia using the ABCD model. Table 6 shows the summary of the proposed strategies and action plans from the previous parts.

By implementing the proposed strategies, Indonesia will expand the value chain into the vehicle design and development with the LCGC product. At the same time, strengthening their position in the activities that have already entered before; become production base in SEA region and global suppliers for the transmission components with the higher productivity and skilled labor (Figure 14).

Figure 14

Future Potential Participation of Indonesia in Automotive GVC



Source: Author, 2017

Table 6

Summary of Strategic and Action Plan for Indonesia Upgrading Process in the Automotive GVC

ABCD Model	Strategic Plan	Sub Categories of ABCD Model	Action Plan
Agility	Promoting Acceleration Development of Foreign Investment	Speed	1. Improving the quality of Infrastructure, Telecommunication, and Transportations 2. Improving the openness environment
		Precesion	1. Attracting the Japanese lead firms to invest in the higher value-added activities 2. Attracting more FDI from other lead firms other than Japanese firms
Benchmarking	Moving to Higher Value Added Activity	Learning	1. Utilizing export-oriented strategy 2. Strengthening position by outward FDI: technlogical learning, market learning, and follow the customer motivation
		Best Practice	1. Specialization in the production of transmissions of motor vehicles 2. Choosing LCGC vehicles as Indonesia's "Product Champion" strategy 3. Making Indonesia as R&D center for green car vehicles
Convergence	Formation of Global (Regional) Network	Mixing	1. Diversifying domestic market with other foreign brands other than Japanese brands 2. Improving the automotive cluster
		Synergy Creation	1. Strengthening regional relationship and becoming vital hub for automotive industry in SEA 2. Meeting the global standards
Dedication	Human Capital Development	Diligence	1. Matching the local and global needs when preparing appropriate skiils needed 2. Developing soft skills and managerial skills for the workforce
		Goal Orientation	1. Achieving higher productivity 2. Strengthening relationship between private sectors and educational institutions to

Source: Author, 2017

4.3 Priority Scale of Indonesia's Upgrading Strategy using ABCD Model

The previous section explains in detail strategic and action plan that can be done for Indonesia to upgrade their participation in Automotive GVC using the ABCD model framework. From the previous section, lags behind one fundamental question that is which strategy should come first and which strategy should come later? This section focus is answering that fundamental question. Four strategic plan that explained in the previous section will be reorganized by adding one element that is priority scale by using ABCD model.

Based on Moon (2016), "D" part should be the base or core for the other parts. The reason is that element "D" reinforce and strengthen the other factors of ABCD model by providing motivation and direction for success (Moon, 2016). Thus, in the context of formulating strategies for upgrading in the Indonesia automotive industry, "D" part, which is human capital development, should be the highest priority in Indonesia upgrading strategy. Human capital development should become the core of the other strategies.

South Korea has experienced rapid and sustained economic growth since decades ago. South Kores is the only country that has managed from one of the poorest countries to one of the leading economies in the world. It makes South Korea as the model of growth for other nations. An important factor of Korea's economic development is the role of human capital. Well educated, trained, and a healthy

worker is factors that boost Korea's economic productivity. Therefore, education is highly important and significant factor for the development of the Korea economy.

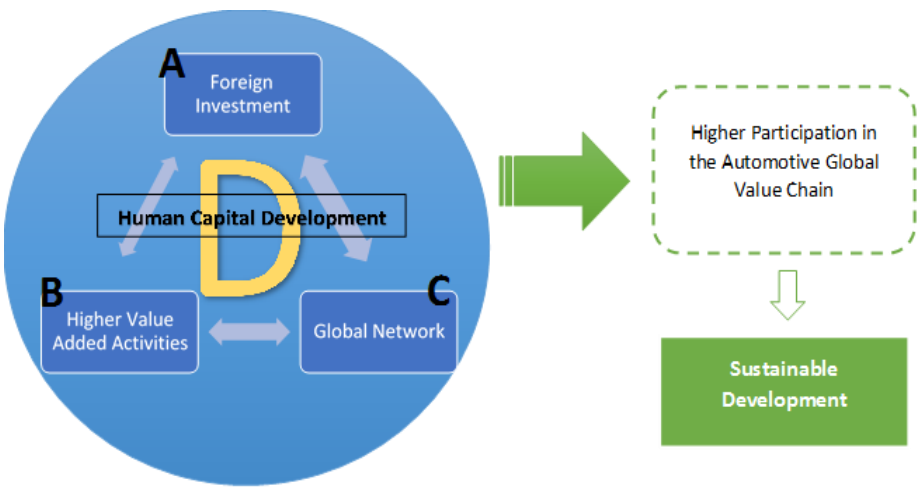
As mentioned above, education is one of the backbones of Korea's success. The rapid expansion of education in Korea has played a significant role in enhancing the quality of Korean human resources, which later contributed to the economic development. Korea put much investment in education. Therefore, education plays a pivotal role in Korea's transformations that help Korea's economic development.

Learned from Korea experiences, it makes sense for Indonesia to put priority for Human Capital Development in the first place. Strengthening Indonesia's workforce is necessary to be able to implement the other strategy. Although other factors also matter, the well-educated and skilled workforce is the key determinant to ensure the smooth implementation of other strategies.

Factor such as well-establish logistic system, good infrastructure, consistent regulations, openness business environment, and tax benefits, as well as cheap labor are an important element to attract FDI. One point should be emphasized in here is any country can have those attracting factors. So lead firms, or foreign investor can easily pick their host country based on their motivation. Especially for cheap labor, foreign investors can easily shift their investment wherever location they can find cheaper labor. From the host country point of view, this is a disaster. Thus, the host countries should have a sticky factor that can make investor maintain or even increase their investment in the country. The sticky factor is well-educated and skilled workforce.

The skilled workforce may lead to the higher labor cost. Some developing countries think that having high labor cost will make their country less attractive, until some extent it is true, yet in the long-run it is beneficial. Higher skilled labor leads to greater productivity of the labor. From the investor point of view, higher productivity is more attractive than cheap labor. It is because what matters for the firms is unit labor costs, not wages per se (Taglioni and Winkler, 2014). Thus from this point, the first goal to have workforce development is to increase the productivity.

Figure 15
Indonesia Upgrading Model in Automotive GVC



Source: Author, 2017

Figure 15 illustrates the relationship between human capital development, FDI, moving to higher value-added activities, and global (regional) network. Well-developed workforces, which reflected with high skilled labors and well-educated workers, is the foundation for other strategies. On the one hand, many foreign firms will be attracted to put investment to Indonesia when Indonesia has higher productivity. On the contrary, well-educated workers with high technological

capabilities can open up the opportunities to shift to the higher value added activities. Specialization in the specific niches activity can be determined by the knowledge acquired throughout the learning process. Reaching global standards will become easier because it is not something strange anymore. With the soft skills such as foreign languages, skill opens up the chance to conduct business with foreign players. Connection with different countries become faster and smoother.

Therefore, it is important to put human capital development as the core development strategic. Once it has been achieved, it will be easier for Indonesia to pursue the other strategies. However, the relationship between the other three strategies is not a causality relationship instead each of the strategy related to each other. By doing so, Indonesia can achieve higher participation in the Automotive GVC and move to the head of GVC. In the end, it gives a sustainable development.

Chapter 5 Conclusion and Implication

The study has attempted to do an in-depth, comprehensive assessment of the efforts to enhance Indonesia's GVC participation. The findings of the study indicate that there are four strategic development trajectories for Indonesia to upgrade its participation in the automotive GVC. First, Human Capital Development is an essential element for the upgrading development. It serves as the backbones of the other strategic development strategies. Indonesia should not only focus on the improvement skills of the workforce but also consider the synchronization of the local and foreign needs of the skills. More on that, developing soft skills and managerial skill is as important as improving hard-skills. Soft skills are the glue for the workers to maintain high performance in the job. Lastly, a healthy workforce development is the result of good collaboration among private sector, an industry association, educational institutions, and government.

Human capital and knowledge including skills promote the transformation to the higher value-added activities. A skilled workforce is a vital competitive asset for industry upgrading. Having appropriate skills is the key to upgrading. Having higher skilled workforce boost up country's opportunity to take more roles in higher value added activities.

Second, the role of transnational companies is one of the key drivers for the development of GVC. Thus, attracting those transnational firms into Indonesia is the quickest way to get more involved in the automotive GVC. While attracting foreign firms, Indonesia should be precise by attracting the right investor. While attracting foreign firms, Indonesia also needs to consider in which activities they invest. Since

Indonesia already entered automotive GVC, it is better to draw investment for high value-added activities. In this case, Indonesia should be able to attract more investment for the R&D activities.

Third, to move up to the head of the automotive GVC Indonesia need to start participating in the higher value-added activities rather only focus becoming assembly manufacturers. Focusing on one specific activity is important in the GVC. Indonesia has a good prospect in the parts and components sector of the automotive industry. Indonesia can specialize to produce transmission of the motor vehicles. The transmission production can be for lead firms operating in Indonesia or export to foreign markets. The later one creates another opportunity in the GVC. Once Indonesia increases their export capacity, there will be a chance for Indonesia to strengthen its position by doing outward FDI.

Another alternative strategy for Indonesia is supporting "Product Champion." Potential "Product Champion" which have a great prospect for Indonesia is LCGC. Looking up the high potential market of LCGC, Indonesia should take advantage by choosing LCGC as their specialty. Indonesia should be able to invite lead firms to collaborate to manufacture the LCGC. Besides that, Indonesia also needs to attract them to establish an R&D center for the LCGC. By doing it, Indonesia can learn all the technologies and knowledge from the lead firms. As a result, Indonesia can become the production and R&D base for the LCGC in the SEA region.

Speaking of SEA region, the last proposed strategy is related to enhancing the global (regional) networks. It is important for Indonesia to strengthening the regional

relationship in SEA region. When Indonesia gain more capabilities, Indonesia should target a position as a vital hub for the automotive industry in SEA.

At this moment, Indonesian automotive industry is dominated by Japanese players. If Indonesia keeps relying on Japan players only, Indonesia automotive industry at this stage may be trapped in the situation where they cannot grow further. It may lower the prospect to export parts and components to other countries' firms due to the different standards since Indonesia only becomes suppliers with specific standards from Japanese players. Therefore, to avoid being trapped Indonesia should start to diversify their automotive industry. Indonesia local industry needs to work with other manufacturers from different countries.

To support this research, it is needed to have empirical analysis on the relationship between workforce, FDI, higher value-added activities, and global network to prove that human capital is the core of the others. Other than that, in this research, the proposed strategies do not include policy should be taken by the government. The role of government is necessary for the development of the country in the GVC. Therefore, those aspects are the area of the further study that can be covered in the future.

References

Pardede, Aaron. 2013. “Automotive Parts Industry in Indonesia.” *IPSOS Business Consulting.*

Baldwin, R. and B. Yan. 2016. “Global value chain participation and the productivity of Canadian manufacturing firms.” in S. Tapp, A. van Assche and R. Wolfe (eds). Redesigning Canadian Trade Policies for New Global Realities. *The Art of the State*, Volume VI, IRPP.

Cattaneo, O., G. Gereffi and C. Staritz (eds). 2010. “Global Value Chains in a Postcrisis World.” *A Development Perspective*. The World Bank

Cattaneo, O., G. Gereffi, S. Miroudot and D. Taglioni. 2013. “Joining, Upgrading and Being Competitive in Global Value Chains. A Strategic Framework”, *World Bank Policy Research Working Paper*, No. 6406, the World Bank, Washington DC.

Cheng, K. et al. 2015. “Reaping the Benefits from Global Value Chains.” *International Monetary Fund.*

De Backer, K. and S. Miroudot. 2013. “Mapping Global Value Chains”, *OECD Trade Policy Papers*, No. 159, OECD Publishing.

Dunning, John H. 2000. "The Eclectic Paradigm as an Envelope for Economic and Business Theories of MNE Activity." *International Business Review* 9.2: 163-190.

Elms, D. and P. Low (eds). 2013. “Global Value Chains in a Changing World, Fung Global Institute, Nanyang Technological University and World Trade Organization”, *WTO Publications.*

Ferrantino, M. 2013. “Policies to improve the supply chain: what needs to be done?” in D. Elms and P. Low (eds). *Global Value Chains in A Changing World*, Geneva, WTO publications. pp. 263-277. WTO Publications.

Gereffi, G. 2011. "Global value chains and international competition." *Antitrust Bulletin*. 56(1): 37-56.

Gereffi, G. 2015. “Global value chains, development and emerging economies.” *Research, Statistics and Industrial Policy Branch Working Paper*. No. 18. UNIDO.

Gereffi, Gary, and Joonkoo Lee. 2012. "Why the world suddenly cares about global supply chains." *Journal of Supply Chain Management*. 48(3): 24-32.

Gereffi, Gary, and Timothy Sturgeon. 2013. “Global value chains and industrial policy: The role of emerging economies.” In Deborah K. Elms & Patrick Low (eds.), Global Value Chains in a Changing World (pp. 329-360). Geneva: World Trade Organization, Fung Global Institute and Termasek Foundation Centre for Trade and Negotiations.

Gerefffi G, K Fernandez-Stark and Psilos. 2011a. “Skills for upgrading: workforce development and global value chains in developing countries.” *Center on Globalization, Governance & Competitiveness (CGGC),* Duke University, Durham NC.

Gerefffi G, et al., 2011b. “Meeting the Upgrading Challenge: Dynamic Workforces for Diversified Economies.” *Center on Globalization, Governance & Competitiveness (CGGC),* Duke University, Durham NC.

Gereffi, G. and K. Fernandez-Stark. 2011. “Global Value Chain Analysis: A Primer, *Center on Globalization, Governance & Competitiveness (CGGC)*, Duke University, Durham NC.

Humphrey, J. 2004. “Upgrading in Global Value Chains.” *International Labor Organization*.

Humphrey, J. and Memedovic, O. 2003. “The Global Automotive Industry Value Chain: What Prospects for Upgrading by Developing Countries.” *SSRN Electronic Journal*.

Li, Jing, Yong Li, and Daniel Shapiro. 2012. "Knowledge Seeking and Outward FDI of Emerging Market Firms: The Moderating Effect of Inward FDI.” *Global Strategy Journal* 2.4: 277-295.

Miroudot, S., D. Rouzet and F. Spinelli. 2013. “Trade policy implications of global value chains: Case studies.” *OECD Trade Policy Papers*. No.161. OECD Publishing.

Miroudot, S. 2016. “Global value chains and trade in value-added: an initial assessment of the impact on jobs and productivity.” *OECD Trade Policy Papers*, OECD Publishing, forthcoming.

Moon, Hwy Chang. 2007. Outward Foreign Direct Investment by Enterprises from the Republic of Korea. New York and Geneva: United Nations. Global Players from Emerging Markets: Strengthen Enterprise Competitiveness Through Outward Investment.

Moon, Hwy Chang. 2016(a). *The Strategy for Korea's Economic Success*. First ed. Oxford; New York: Oxford University Press.

Moon, Hwy Chang. 2016(b). *Foreign Direct Investment*. New Jersey: World Scientific.

Moon, Hwy-Chang and Thomas W Roehl. 2001 "Unconventional Foreign Direct Investment and the Imbalance Theory". International Business Review 10.2: 197-215.

OECD. 2013. Interconnected Economies: Benefitting from Global Value Chains. *OECD Publishing.*

Porter, Michael. 1990. "Competitive Advantage of Nations". *Harvard Business Review,* March-April.

Porter, Michael. 2000. "Location, Competition, and Economic Development: Local Clusters in a Global Economy". *Economic Development Quarterly* 14.1 : 15-34.

Scherer, M. et al. 2016. "Opportunities and Challenges in Indonesia's Automotive Industry." IPSOS Business Consulting.

Staritz, Cornelia, Gary Gereffi, and Olivier Cattaneo (eds.). 2011. International Journal of Technological Learning, Innovation and Development, 4(1-3). Special issue on "Shifting end markets and upgrading prospects in global value chains."

Sturgeon, T. and Biesebroeck, J. 2011. "Global Value Chains in the Automotive Industry: An Enhanced Role for Developing Countries?" *Int'l Journal Technological Learning, Innovation and Development*. 4, Nos 1/2/3 (2011).

Sturgeon, T. et al. 2016. "The Philippines in the Automotive Global Value Chain." *The Duke University Center on Globalization, Governance & Competitiveness* (Duke CGGC).

Taglioni, D. and Winkler, D. 2016. “Making Global Value Chains Work for Development.” *International Bank for Reconstruction and Development / the World Bank.*

Ulrike Mayrhofer and Ana Colovic. 2009. “Optimizing the Global Value Chain: An Analysis of the Automobile Industry.” *10th Vaasa Conference on International Business,* Aug 2009, Finland. pp.19.

World Bank. 2012. “Picking up the Pace: Reviving Growth in Indonesia's Manufacturing Sector.” Jakarta: World Bank.

초록

본 연구는 인도네시아가 자동차산업 글로벌 가치사슬 (Automotive GVC)에서의 이의 참여지수를 향상시킬 수 있는 방안에 대해서 분석했다. GVC 는 한 국가의 경제적 성장의 동향을 대표하는 요소이다. 자동차산업은 인도네시아의 경제적 성장을 이루어내는 원동력 중 하나으로서 상당히 중요한 역할을 해왔다. 동남아 지역에서 경제 대국으로서 인도네시아는 자동차산업 글로벌 가치사슬 (Automotive GVC)에서의 이의 참여도를 향상시킬 수 있는 대책이 아주 많고 폭넓다.

본 연구에서는 인도네시아의 자동차산업 글로벌 가치사슬 (Automotive GVC) 참여도를 향상시키는 전략적 경제 동향을 크게 4 가지로 나눈다. 첫째, 경제적 성장을 위해서는 인력자본개발이 결적적인 역할을 한다. 이는 다른 전략적 경제 전략들의 뒷받침이 되어 매우 중요한 요소이다. 둘째, 다국의 기업들을 유치하는 것도 자동차산업 글로벌 가치사슬 (Automotive GVC) 참여지수를 향상시킬 수 있는 아주 효율적인 대책이다. 셋째, 인도네시아는 조립 제조업보다도 고부가가치 산업에 참여도를 향상시키기 시작할 필요가 있다. 인도네시아의 자동차용 부품 제조 부문은 앞으로도 전망이 여전히 좋을 것으로 예측이 되기 때문이다. 마지막 전략은 글로벌 (지역별) 넷트워크와 관련이 있다. 인도네시아는 동남아 국가들 간의 지역적 관계를 유지하고 앞으로 강화할 수 있게 만들 수 있는 대책이 필요하다.

키워드 : 글로벌가치사슬 (GVC), 업그래이딩 프로세스 (upgrading process), 자동차산업, 인도네시아

학생번호 : 2015-25071